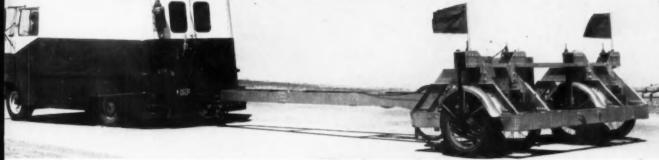
#### COMMERCIAL CAR JOURNAL

A CHILTON PUBLICATION

THE MAGAZINE FOR TRUCK AND BUS FLEET OPERATORS 7he AASHO Road 7est







#### **CONSTRUCTION EQUIPMENT**

Service Data and Selection Specifications Issue



Geared by FULLER . . .

## BE-MAC cuts trip time 1/6 with ROADRANGER Transmissions

Be-Mac Transport Company, Inc., St. Louis, Mo., recently purchased 20 International Model DCOT-405 Tractors equipped with 10-speed Fuller R-96 ROADRANGER Transmissions.

The result: running times cut drastically and split schedules eliminated. Typical of the reduction in trip time is the company's St. Louis-to-Tulsa run. Be-Mac has shaved two hours from the 12 hours previously required for this 430 mile trip.

Company officials credit much of the sharp reduction in transit time to the semi-automatic Fuller R-96 Transmissions. With all ten forward speeds shifted by a single lever, and with short, easy steps between ratios, the 220 hp tractors can operate in the peak borsepower range at all times. Shifting effort is reduced and driver fatigue is minimized.

In addition to the 10-speed R-96's in the new tractors, Be-Mac operates

8-speed R-46 ROADRANGERS in their White 9000 Series Tractors. P. W. Goode, Executive Vice President of Be-Mac, says, "The reliable service we received from Fuller Transmissions in our older tractors influenced our selection of Fuller ROADRANGERS in our recent equipment purchases."

Ask your dealer for full details about the Fuller Transmission which is best suited for the requirements of your particular operation.

**FULLER** 

KALAMAZOO, MICHIGAN

Subsidiary EATON Manufacturing Company

Unit Drop Forge Div., Milwaukee 1, Wis. \* Shuler Axle Co., Louisville, Ky. (Subsidiary) \* Sales & Service, All Products, West. Dist. Branch, Oakland 6, Cal. and Southwest Dist. Office, Tulsa 3, Okla.



#### "...we didn't just guess...

... about using Pedrick Formflex piston rings," states Gerald Kramme, Vice President of the P. E. Kramme, Inc., a large Eastern tank truck concern. "We've learned the hard way, through experience with other brands, that for our hauling, both long and short, Pedrick rings are tops in dependability. Since we haul perishables, this is especially important. We also find that with Pedrick rings, we get longer service life with lower costs."

What about *your* truck or fleet? At your next overhaul, get the best. Specify Pedrick Formflex Chrome piston rings. It will pay you in added service miles, reduced downtime, greater savings. Wilkening Manufacturing Co., Philadelphia 42, Pa. *In Canada*—Wilkening Manufacturing Co. (Canada) Ltd., Toronto 2.



Vice President of P. E. Kramme, Inc.

Gedrick FOR THE RIGHT RING JOB

#### COMMERCIAL CAR

--- July 1959--- Vol. 97--- No. 5-

#### This Month's Feature - HIGHWAY TAXES AND HIGHWAY USE

#### THE FUTURE—AASHO Road Test Shifts Into High Gear ............ 100

It's gathering facts to help decide the level of highway taxes you'll pay, what size vehicles will pay how much, what kind of highways will be built, future size and weight limits

#### 

Congress is reaching in all directions to find the dollars needed to keep the building program on schedule . . . including into your pocketbook. This could be the month of decision. Here are the facts

#### Also in this issue . . .

#### Making Two-Way Radio Work for Safety.....108 From three fleets comes this report on how to promote

safety as well as operating efficiency at no extra cost

#### How to Balance Heavy-Duty Brakes...... 110

Bert Ogden of Consolidated Freightways and J. V. Bassett of Raybestos Manhattan tell how they'd go about it

#### Governors ...... 11:

Briefing a cool discussion of a hot subject at Society of Automative Engineers' Summer Meeting, fleet operator Fred Hague of Sun Oil tells what the user wants . . . G. R. Beardsley of Ford shows what they can do . . . five makers describe the operation of units they have available

#### 

Air doesn't help engine efficiency when it gets mixed in the coolant. Here's why and one way to keep it out

#### 

Dorsey describes a full new line . . . Brown adds two allsteel models . . . Baughman, Gramm and Trailmobile announce bulk units . . . Straddle trailer speeds loading

#### 

How Hydro-Aire's brake balancing system works . . . A report on Thompson Products' hill retarder

#### 

Truck-mounted loader handles brick, concrete block, other building materials on pallets . . . Aeroquip's cargo tiedown system for vans includes second deck feature

#### Court Decision Bars Illinois Mud Guards.... 186

Supreme Court's reasoning is important to fleet operators in the light of federal government's power to control interstate commerce and strike down state barriers

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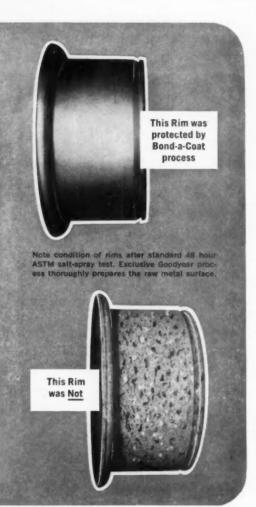
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#### E D I T O R I A L C O M M E N T

#### Highway Money Today . . . and Tomorrow

TWO ITEMS in the news this month could cost the trucking industry real dough. One involves the deep financial problems of the highway building program. The other concerns some handwriting from the AASHO Road Test at Ottawa, Ill.

Both are described in some detail in the feature section of this issue. Both may increase the tax bite on your pocketbook. And the toughest part is that there isn't much of anything you can do about it except to keep informed (we'll do the best we can on this) and keep others informed.

Basic trouble with the highway situation is rising costs. Construction on the Interstate System is now expected to average close to \$1 million a mile—far higher than original estimates. As the money squeeze gets tighter, the suggested solutions focus on three possibilities . . . (1) higher taxes, (2) delayed completion dates and (3) borrowing.

Nobody likes more taxes. As a nation, we're historically impatient with delay. Borrowing could increase the cost by some \$9 billion. Result: Probably a combination of all three. Personally, we'd rather wait a bit, as we've indicated before. But delay may postpone the very stretch of highway you want most. Some judicious letters to your Senators and Congressman may be appropriate soon.

The road test out in Illinois is directly related

since it will help develop the latest, most scientific data on how much of highway cost should be allocated to trucks.

From everything we've seen so far, a very real attempt is being made to keep it fair and square. Unlike the Maryland Road Test, its highway sections were especially constructed for the job.

There are all kinds of gages and gadgets designed to measure the effect of varying axle loads on different pavements. Based on the notnew incremental theory, the idea is to find out how much *more* highway it takes to withstand heavy loads. Then you pro-rate the costs.

But like any such project, there are a few built-in booby traps too. Here are some of the questions born so far at AASHO.....

- Is it right to include sections "engineered for destruction"? Some of them are.
- On the weaker sections, should not repair costs be accurately kept and made a part of the record? Apparently they are not.
- Is a two-year period long enough to gage the effect of weather on the "no-load strip"?
   There's a good bit of doubt on that one.
- Will the fact-finders remember when the job is all done, that the increased costs apportioned to trucks applies only to surface construction? Let's hope so, for it amounts to something less than 30 per cent of total costs on new highway construction.

Bart Rawson Editor





#### New Lightweight, Low-Priced INTERNATIONAL V-8 HIGHBALLS 48,000 lbs. gross!

Costs less than competitive highway tractors that haul less!

This new International model B-180 tractor offers new flexibility and new "beef"! No matter how you figure it, you get a lot more truck for a lot less money!

Take your choice of either an economy-proved "six" or high-performance 197 hp. V-8—at no extra cost! Both engines are built for truck work alone . . . give you the power needed in a lightweight unit to haul bigger payloads. Heavy-duty axles to 7,000 lbs. in front and 18,500 lbs. in rear . . . power steering and semi-automatic transmission optional.

It's only one of 58 new models that are out to prove: "This year only International Trucks are so new, so powerful, so economical to own and operate"! Models include pickups and six-wheelers with over 40 new features—range of five economy-proved "sixes" plus three new optional V-8's! See your International Dealer about the model that's "got it" for your job!



New INTERNATIONAL compact-design models for terminal pickup and delivery give you 64 cu. ft. of additional payload area compared to conventional models of same overall length. Cabs offer high-backed seat that measures over five feet across, extended glass area. No "doghouse" in the cab means more leg room and easier servicing . . all of V-8 engine is under the hood. "Sixes" and V-8's available in models up to 33,000 lb. GVW tandems.

# INTERNATIONAL TRUCKS WORLD'S MOST COMPLETE LINE

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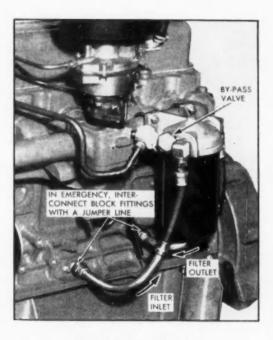
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Truck Oil Filter Caution Degrease Oil-Fouled Spark Pluas Check Your Thermostats Detroit Diesel Takes-Out Oil Hole **Euclid Hydraulic Pressures Dodge Hydraulic Clutch Adjustment** Think About the Electrical System **PM on Dodge Transmissions** 



#### Truck Oil Filter Caution

MEVROLET SAYS all service replacement J cylinder blocks produced in 1959 for its 261-cu in. 6-cyl truck engine are machined so that a full-flow or a by-pass type oil filter can be

When installing a full-flow filter, the oil gallery plug in the cylinder block should be driven in 5/8 in. (until it bottoms). To connect a by-pass filter, the drive plug must remain flush with the boss surface of the casting-do not drive the plug.

The 1959 261-cu in. production engine equipped with the full-flow filter has a by-pass



TIMELY NOTES ON TRUCK, BUS, PASSENGER CAR FLEET MAINTENANCE AND OPERATION briefed by ED SHEA. Technical Editor

valve built into the head of the filter assembly. The by-pass formerly in the cylinder block has been closed off. Here's how to disconnect a fullflow filter in case of emergency, such as an oil leak or broken oil lines: A jumper oil line must be connected between the two oil filter fittings in the block (see illustration). This is the only means by which engine oil circulation can be maintained while the full-flow filter is disconnected.

#### Degrease Oil-Fouled Spark Plugs

H ERE'S ONE we've all probably been guilty of at one time or another. Did you know that an oil-fouled spark plug cannot be thoroughly cleaned by merely blasting it with abrasive in a spark plug cleaner?

Champion Spark Plug engineers point out that heavy oil deposits on the spark plug will pick up the abrasive and remain in the recesses between the shell and the insulator. These deposits can seriously affect the plugs ability to dissipate heat at high engine speeds. They should be removed by degreasing in a suitable solvent and dried before abrasive blasting.

#### **Check Your Thermostats**

F THERMOSTATS are not operating prop-F THERMOSTATS are not perfectly, they can cause a great deal of trouble. It could cost you a \$560 motor overhaul. We know. It happened to one of our company trucks, with just 75,000 miles of service. Other trucks of the same make, age and mileage are doing fine. They operate on short runs, carry heavy loads and are generally empty on return trips.

The driver first reported no heat in the cab. First diagnosis was poor circulation in the heater core. So the core was replaced. This didn't do the trick. Still no heat! Next step dug a little deeper. The goose neck was removed to check the thermostat. Here was the trouble-a thermostat stuck in the open position. A high rate thermostat (180 deg) was installed. Now the driver was happy. He had plenty of heat.

But after a period of time he had a new complaint. Power output was lower than normal. oil consumption was up and spark plugs kept

(TURN TO PAGE 12, PLEASE)

# Here are the three when hydraulic brake

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# R's\* to remember systems need repair...



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2. UNITED PARCEL SERVICE (San Francisco) saved \$800.00 in towing costs in just 3 months with a single WATSON TOWMASTER!



3. RYDER TRUCK RENTAL uses TOWMASTERS to exchange trucks and tractors in many of their 35 locations throughout the Southeastern U.S.—as well as for retrieving disabled rigs. One driver with a TOWMASTER-equipped tractor can exchange two units at a time at 50% saving in driver cost. Or in case of breakdown of a customer's truck, he can haul out a replacement and retrieve the disabled unit. No need to keep a costly special wrecker on standby, or hire expensive towing services!

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#### H. S. WATSON

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#### TRUCKS



Continued from Page 9

fouling out. There were no oil leaks, breathers were OK and compression normal. So the engine was torn down. Here's what was found: Plenty of sludge and a heavy deposit of carbon on the rings and intake valves. The carbon deposit all but closed off the valve ports. Moral: Keep your thermostats working . . . and select the right one.

#### **Detroit Diesel Takes-Out Oil Hole**

DETROIT DIESEL reports it's engine lubricating oil pump driven gear assemblies have been revised. The 18-in. drilled hole through the gear and bushing in the 3, 4 and 6-cyl Series 71 engines has been eliminated. Tests proved adequate lubrication of the shaft is obtained without the hole. Both the former (with drilled hole) and the revised gear (without hole) are completely interchangeable. Removal of the hole does not affect the operation of the oil pump assemblies.

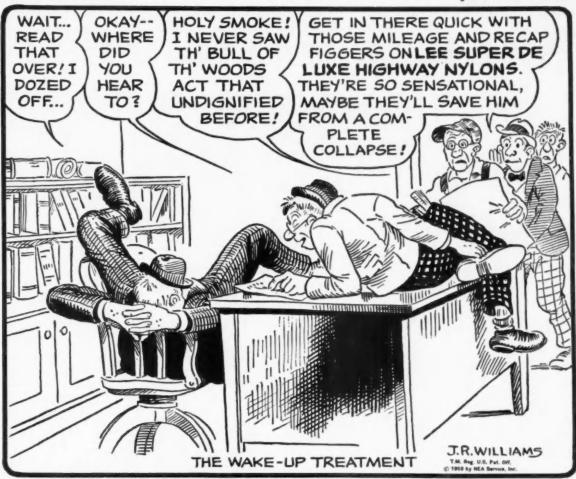
#### **Euclid Hydraulic Pressures**

HERE'S THE latest recommended operating pressures for the hydraulic and steering systems as given in a recent Euclid bulletin. In all cases the maximum pressure (psi) is given.

Model	Hydraulic	Steering
No.	System	System
UD	1500	800
FD	1750	1000
1-63TD	1500	1000
65 & 66TD	1500	1100
1-4FFD	1500	1000
9,10FFD	1500	1100
LLD	1750	1000
FDT	1500	1000
TDT	1500	1000
LDT	1700	1000
UOT	1500	1500
FOT	1500	1500
LOT	1700	1500

#### **Dodge Hydraulic Clutch Adjustment**

HERE'S THE adjustment procedure Dodge set up for the hydraulic clutch on its 1959 model trucks so equipped. First, pedal free play should be 1/8 to 1/4-in. measured at the pedal pad. Adjust master cylinder push rod to obtain cor-



#### BIG ORIGINAL MILEAGE PLUS BONUS RECAPS Both at the Lowest Price with Lee Super DeLuxe Highway Nylons

Operators who keep an eagle eye on their cost vs. mileage figures will tell you that Lee Super DeLuxe Highway Nylons run up the best record for them. Lee Nylons are best by far for extra original mileage, multiple recaps and for the all-around service that cuts your cost-per-mile way down.

An exclusive Lee process makes Super-Tensile Nylon the toughest cord ever to go into a truck tire. Users testify to the tremendous protection this cord gives against impact bruises, blowouts and moisture damage. Downtime due to tire damage isn't a worry with Lee Super DeLuxe Nylons.

There's extra mileage packed into the natural rubber tread, a special Lee design, that delivers tremendous traction and cooler running on the road.

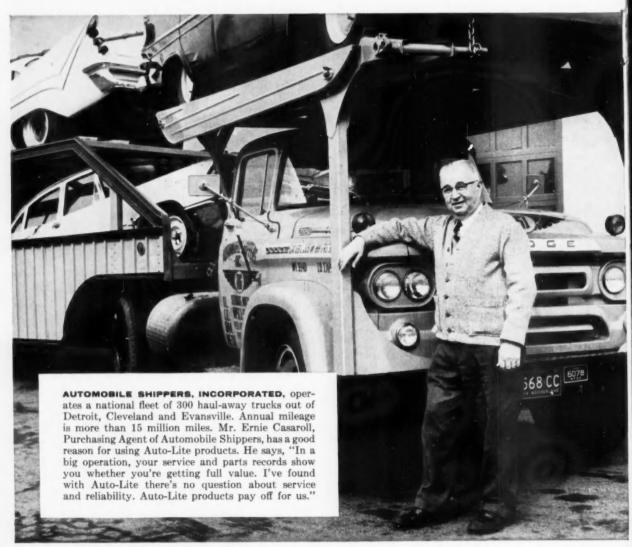
Put your own units on Lee Super DeLuxe Highway Nylons, tube or tubeless. It's the surest step to increased mileage and recaps. And when it's time to retread, be sure to specify Lee Double-Life Tread Rubber for maximum recap mileage.

Shown is the Lee Super DeLuxe Highway Nylon. Whatever your truck tire needs, there's a Lee that's right for the job.



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Send today for full information on the AUTO-LITE NATIONAL FLEET ACCOUNTS PROGRAM that can mean substantial savings for you in electrical maintenance costs.

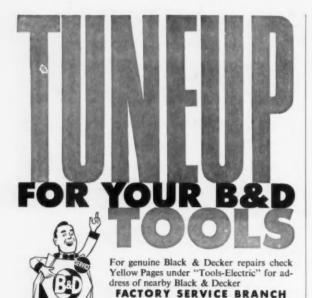


AUTO-LITE STA-FUL WITH POWER BOND has all the sta-ful features plus Power Bonding that eliminates mechanical failure even in the most severe service. Every Power Bond is registered by serial number in the owner's name at the factory and needs water only one-third as often as ordinary batteries. Fit most 12-volt applications.



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COMPANY							
STREET ADDRESS_							
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TRUCKS



Continued from Page 12

rect clearance. Next, check clutch linkage free play at the clutch slave cylinder. The adjustment for light- and medium-duty trucks with release fork and slave cylinder on right side of clutch housing is as follows: Adjust linkage free play at the clutch fork pivot pin to 70 to 1/4-in. measured at outer end of release fork. On heavyduty models (trucks with clutch fork shaft in housing and slave cylinder on left side of housing), allow 7/64 to 1/8-in. free play at clutch fork shaft lever.

#### Think About the Electrical System

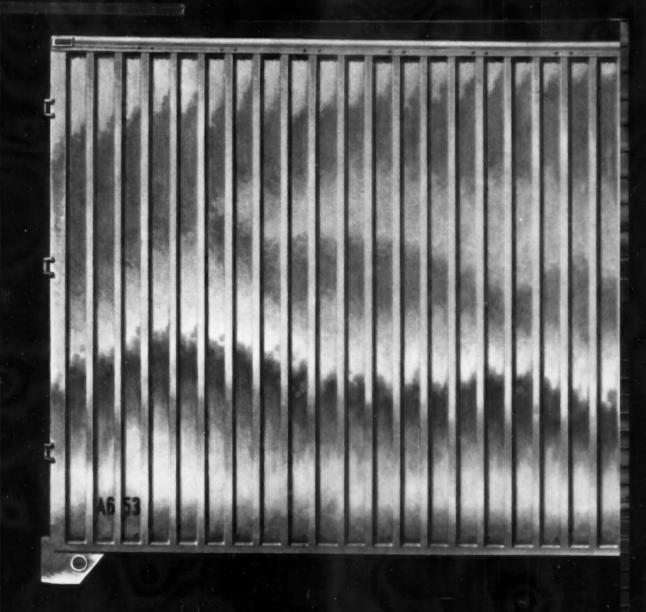
A THE RECENT Summer Meeting of the Society of Automotive Engineers, W. C. Edmundson of Delco-Remy reported on "Trends in Truck and Bus Electrical Equipment." Much of what he said gives food for thought on getting the most for the dollar invested. For example . . .

"A user should not be intrigued with the 45amp rating on a passenger car generator and apply it where the steady load will be 45 amp. For economy's sake, such generators are designed for low load factor and average use, not the 40- or 46- amp load of a typical tractortrailer vehicle. Such a load actually requires a

(TURN TO PAGE 24, PLEASE)



"Oh, I'll admit you NEVER bring this rig in with PETTY troubles"







PRIVATE FLEETS PICK CUMMINS! Special report on over-the-road power from 4 famous

American companies

Krafibre

COLUMBIA
BOX BOARD
MILLS, INC.
QUALITY PAPER BOARDS FOR
BETTER PAPER BOXES

CUMMINS

Bordens

#### **CUMMINS DIESELS CUT PRIVATE FLEET**

Many businesses operating their own fleet of trucks are experiencing a new kind of profit, thanks to the efficiency of Cummins Diesels. Unlike common carriers, private fleets do not depend upon the revenue to be gained from the hauling of goods and materials.

These companies use their trucks to perform a necessary service. And one of the most important considerations, if not the most important, is reduced operating costs. The four companies, whose insignia you see above, for example, operate Cummins Diesels in important phases of their manufacturing-marketing service. Their experience has taught them that Cummins Diesels can provide low-cost, dependable power... the kind of power that stands any test.

COLUMBIA BOX BOARD MILLS INC., Chatham, New York, keeps a fleet of 12 Cummins-powered trucks busy hauling rolls and sheets of box board through the Middle Atlantic area and the New England states. Their satisfaction with Cummins is due to dependable operation, improved service and reduced operating and maintenance costs.

SAFEWAY STORES, INC., Denver, Colorado. The Denver Division of Safeway Foods uses their Cummins-powered units to deliver food products from warehouse to stores throughout the vast Denver region. The efficient operation of the Cummins engines helps maintain on-time deliveries no matter what the traffic and weather conditions.

# SAFEWAY FOODS

#### **OPERATING COSTS TO A NEW LOW!**

THE BORDEN COMPANY, Detroit, Michigan. This famous concern is operating 15 Cummins-powered dairy trucks in the greater Detroit area. A long-time Cummins user, they are sold on the dependability and reliability of these engines. Low cost per mile is an important advantage they get with Cummins Diesels.

BLUE BELL INC., Greensboro, North Carolina. World's premier manufacturer of work and play clothes, including such famous brand names as "Wrangler," "Sedgefield" and "Jeanie," recently put 19 new Cummins-powered units into cross-country service. They consider the models powering these units to be "million mile plus" engines. They are sold on Cummins dependability and economy.

Why don't you get the advantages of Cummins power for your fleets? Twenty-seven models—from 70 to 335 horsepower—are available for any truck application. Each has the features that have made Cummins the popular truck diesel in the world!

In fact, Cummins powers more new trucks than all other makes of diesels combined! Operators, who depend on diesel trucks for their income, know Cummins gives them greater efficiency, lower operating costs, more miles of trouble-free service.

The following page will give you more specific information about the advantages of Cummins power. Better yet, why don't you see your Cummins Distributor today?



#### **CUMMINS: THE NO. 1 TRUCK DIESEL!**

- For nearly 10 years Cummins has powered more new diesel trucks than all other makes of diesels combined! Choose from 27 models—from 70 to 335 h.p.—for every highway application. There's a Cummins to match your specific horsepower needs!
- Cummins components are interchangeable. This
  means you'll be able to achieve greater efficiency in
  stocking parts—less chance for downtime delays.
  Cummins engine design speeds engine repair—reduces
  repair hours.
- Cummins engine features make the difference! For example, the PT fuel system is the world's simplest. It's economical and trouble-free. Wet-type liners, to mention another, mean fast, easy, low-cost replacement. Cummins 4-cycle operation assures extra long engine life.
- Cummins Service is second to none. Over 350 Cummins service and parts locations throughout the United States and Canada means help is available whenever and wherever you need it. They are your repowering headquarters.

CUMMINS

MORE PROFIT

gives you the big plus

#### **CUMMINS ENGINE COMPANY, INC., COLUMBUS, INDIANA**

INTERNATIONAL SALES & SERVICE — CUMMINS DIESEL INTERNATIONAL LTD., NASSAU, BAHAMAS — CABLE: CUMNAS
OVERSEAS FACTORY — CUMMINS ENGINE COMPANY LTD. — SHOTTS, LANARKSHIRE, SCOTLAND

12-18-58

# 2,000,000 MILE ROAD TEST PROVES Molysulfide... GREASE REDUCES WEAR

#### -points the way to MORE REVENUE MILES

There have been many enthusiastic reactions to Molysulfide chassis grease by fleet operators. Here's research proof that their enthusiasm was well placed!—a 2,000,000-mile road test just completed by a leading automotive research organization, in which Molysulfide grease was tested by comparison with a premium multi-purpose grease.

Since the function of a grease is to prevent wear as much as possible, wear reduction is the best measure of a grease's effectiveness. Therefore, the entire test was based on wear

measurements. And the results:

Molysulfide grease reduced wear from 18% to 88% on bus and truck components. (100% wear reduction would have been no wear at all!) Typical items from the extensive research findings are shown at the right. And the general conclusion? Molysulfide grease reduces parts wear where lubricant film is broken . . . or where shock loading or reciprocating motion wipes off normal grease!

Molysulfide grease means more efficient lubrication because of less wear... more time on the road... more revenue miles. To cut your "red-line time" — specify MOLYSULFIDE GREASE for your fleet!

#### MOLYSULFIDE GREASE vs. CONVENTIONAL PREMIUM GREASE

Component or % less wear (PASSENGER CARS) Steering assembly Ball joint suspension 26% Universal joints 30% (TRUCKS AND BUSES) City bus steering ball 88% Kenworth truck steering ball 18% 39% City bus steering universal joint Kenworth truck king pins 57% International truck king pins 42% Kenworth truck front drive line universal joint 59% International truck drive line universal joint 32% Kenworth truck front spring pin 41% Kenworth truck rear spring pin 40% International truck front spring pin 87% International truck rear spring pin

NOTE: Figures are averages for several parts that make up entire component. Also, they are average results over all such components tested.

ORDER MOLYSULFIDE GREASE BY BRAND FROM THESE MAJOR OIL COMPANIES



Cities Service Oil Company Arkansas Fuel Oil Corp. Orange State Oil Co.



Sinclair Refining Company Lithelines: Wely Grease



Skelly Gil Con Skelly Supreme Mul



Phillips Petroleum Comp



Standard Oil Company (Indiana



The British American Dil Company Limited



Sun Oil Company Limited Sun Multi-Buty Grease (Moly Sun Heavy-Buty Chassis Lebricant (Mela)

Average



Socony Mobil Oil Company General Petroleum Co. Magnolia Petroleum Co.



Frontier Refining Compan



off Oil Company



Standard Oil Company (Kentuck) Standard Moly MP Lubricant



Sun Oil Company witi-Buty Grease (Maly)



Cities Service



saco Canada Limites Wolytes

Imperial Oil Limited Esso MP Grease (Moly

#### CLIMAX MOLYBDENUM COMPANY

A Division of American Metal Climax, Inc. 500 Fifth Avenue, New York 36, N. Y.



"They treat you fine at the Goodyear Sign!"

—where you'll find the best values in TRUCK TIRES to meet every need of Tonnage, Traction and Terrain—from pickup and panel-truck operations, to the biggest over-the-road haulers and earth-movers. All backed by years of experience . . . all expertly serviced at

GOODYEAR DEALERS'.



RIB HI-MILER Best buy in the low-price field

Year-round low-cost



SUPER ROAD LUG Powerful off-the-road traction PLUS long, smooth highway mileage

HI-MILER CROSS-RIB Shatters highway tread-wear records

Hi-Miler, Road Lug-T.M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

#### "Cabin Hill we built up our

#### Cossitt Motor Express of Hamilton, N. Y.,

"We handle cargo from a large part of upstate New York into the metropolitan area," says L. Allen Cossitt, President of this hustling company. "A lot of our runs combine fast turnpike travel with Catskill Mountain grade-climbing.



"But even wet, slippery roads don't upset our schedules since

we've been using Cross-Ribs. Sideslips no longer are a threat, and the greater traction sees that we get through tough spots."

Cossitt Express further detail their satisfaction with Cross-Ribs in a simple but eloquent dollars-and-cents quotation from their carefully detailed cost records.

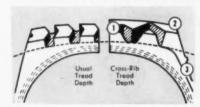
"Last year," says Mr. Cossitt, "our business increased better than 11% over the year before. We covered 15% more miles to earn it.

"But our tire cost-per-mile was 9% LESS."

Mr. Cossitt is specific about tire mileage from Cross-Ribs. "We used to average 40,000 original tread miles from our previous tires. Our Cross-Ribs are averaging 82,000—over 100% more. And they're better on recaps, too."

The super-tough extra tread on Hi-Miler Cross-Ribs—the ruggedness of their 3-T Nylon Cord construction—is racking up similar records among big and small highway haulers all over the world. Just request the details from your Goodyear dealer—or write Goodyear, Truck Tire Dept., Akron 16, Ohio.

#### HI-MILER CROSS-RIB: EXTRA RUBBER plus TRIPLE-TOUGH 3-T NYLON CORD



① 60% thicker nonskid tread! ② Cooler-running tread design. ③ Triple-Tough 3-T NYLON Cord. (Goodyear triple-tempers Nylon cord in an exclusive process involving Tension, Temperature and Time, to longest tire life, most recaps, lowest cost-permile!)

TRUCK TIRES by

#### to Oneida Castle – tire mileage over 100%!"

find Hi-Miler Cross-Ribs real money savers on their hard-driving hauls



Watch the award-winning "Goodyear Theater" on TV every other Monday evening



More tons are hauled on Goodyear Truck Tires than on any other kind

#### TRUCKS



Continued from Page 16

generator such as a 5\%\(^4\)-in diameter, 50-amp heavy-duty unit. In contrast, this generator can provide 100,000 miles brush life where the smaller 45-amp design might give 25,000.

"Brush life and bearings—these are the things to consider for durability. The brush life can be obtained by using the generator at a low load factor, by using best available brush holder design including constant tension springs, by choosing optimum brush sizes and grades, and by having good enough performance so that the generator can be driven at low speeds.

"The bearing life depends upon type, rating, and lubrication. If a truck is to be used for more than pick-up service, ball bearings should be used at both ends of the generator. The drive end bearing must be strong enough to bear the belt loading associated with engine fans, air compressors, and power-steering pumps, all of which use enough horsepower to require high-torque. For long service without attention, we are suggesting the use of a grease reservoir, instead of oilers and frequent attention (or neglect).

"Cycling in combination with vibration, high temperatures and over-charge is the principal enemy of batteries. Cycling may become a type of overload, perhaps comparable to the flexing of an undersized truck tire. It results in positive plate shed and reduced capacity, as well as eventual "treeing" of the shed material. One type of treeing is the building up of deposits shed by the positive plate at the bottom of the cell until a bridge is formed underneath the separator, thus creating a short circuit between the positive and negative plates.

"Vibration accelerates shedding and causes plate and separator wear. In extreme cases, plates may be broken loose. Except as noted below, improvement in this situation must be provided by a better mounting, especially so a firm uniform pressure is exerted on the battery case by the hold-down. A rubber pad, ½-in. or more thick, beneath the case will compensate for any irregularities in the carrier and assure uniform weight distribution. Location of the mounting is also important. If the carrier is attached to a frame member, much less vibration is suffered.

"Under a given driving condition, only two things may be done to relieve cyclingprovide more battery or more generator. With a higher capacity battery the 'depth' of each cycle is less. A generator to give a liberal charge at idle and at slow driving speeds will prevent much of the battery drain, and, of course, relieve the necessity of recharging.

"All too frequently, however, the ratio of battery capacity to load is too low. Granted that a battery large enough to crank the engine usually will fulfill other requirements. But the advent of more and more electrical accessories is causing us to consider also the ratio of battery capacity to maximum constant electrical load of the vehicle.

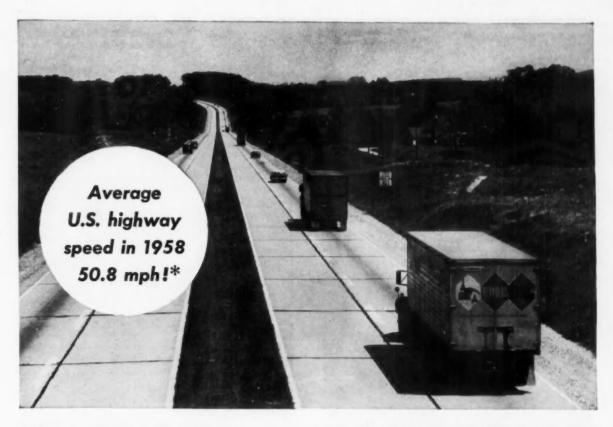
"To prevent early battery failure due to excessive cycling, we suggest that the amp-hr capacity of the battery be at least three times the steady connected load. On that basis, the tractor-trailer load (12-volt system) of 40-amp described earlier should have a 120-amp-hr batter."

#### PM on Dodge Transmissions

ODGE has come up with a new PM schedule for its 1959 trucks equipped with an automatic transmission. Drain and refill with fresh automatic transmission fluid type "A." suffix "A." every 10,000 miles. This differs from the previously recommended change interval of 20,-000 miles for normal driving conditions and 10,000 miles for heavy-duty operations. Along with this change, Dodge also suggests the following: Remove and clean transmission oil pan and intake screen. Adjust kickdown band according to specifications. (Remember, after tightening adjusting screw to correct torque, back-off 21/4 turns on A466 LoadFlite units used with V-8 engines and 31/2 turns with 6 cyl engines.) Adjust reverse band. Since the oil pan is removed, visually check alignment of the spring-loaded manual valve lever detent ball with the valve lever assembly in each shift position. When putting the job back together don't forget to use a new pan gasket. After the transmission is refilled check and adjust the line pressure on the A466 LoadFlite equipped with adjustable regulator valve (no adjustment on PowerFlites). Adjust engine idle to 475-500 rpm. Check and adjust throttle linkage.

#### Stop That Oil Leak

1 T'S ONLY A little oil leak, we'll catch it on the next inspection." This phrase has been repeated over and over in many shops. An interesting note from Shaler Rislone Co. says, "If an engine leaks only one teaspoon of oil per mile, oil will be consumed at a rate of not less than one quart per 192 miles of driving." So, a little time taken to correct oil leaks can result in a substantial saving.



# Can the brakes on your fleet withstand the heat and wear of today's speeds?

Higher speeds call for faster stops, balanced brake action from wheel to wheel and axle to axle. Unbalanced brakes, suddenly applied, can cause heavy rigs to jackknife. Excessive heat will cause some brakes to fade under steady application.

Through long experience, research, and exclusive manufacturing techniques, Grey-Rock offers Balanced Brake Blocks for any make and model truck or busblocks that assure fast, smooth, safe stops under all operating conditions. You can count on thousands more miles between relines—fewer drum replacements—lower maintenance cost—with Grey-Rock. For high-speed, on-schedule operation at the lowest-cost-per mile, see your Grey-Rock jobber.

\*According to Bureau of Public Roads



BALANCED TRUCKSETS FOR LIGHT AND MEDIUM TRUCKS. Specially engineered linings, woven, molded, woven-molded combinations, for every make and model.



FOR SAFER, SMOOTHER STOPS AND STARTS

#### Only Grey-Rock makes

BALANCED BRAKE LININGS

BALANCED BRAKESTS • TRUCKSETS • BRAKE BLOCKS • VEE-LOK® CLUTCH FACINGS

GREY-ROCK Division of Raybestos-Manhattan, Inc., Manheim, Pa.

RAYBESTOS-MANHATTAN, INC., BRAKE LININGS . BRAKE BLOCKS . CLUTCH FACINGS . INDUSTRIAL RUBBER . MECHANICAL PACKINGS . ASBESTOS TEXTILES . ENGINEERED PLASTICS . SINTERED METAL PRODUCTS . RUBBER COVERED EQUIPMENT LAUNDRY PADS AND COVERS . ABRASIVE AND DIAMOND WHEELS . INDUSTRIAL ADHESIVES . BOWLING BALLS



#### ENGINEER'S FIELD REPORT

PRODUCT RPM DELO SPECIAL OIL

Gray Line Sightseeing Tours Salt Lake Transportation, Inc. M Salt Lake City, Utah

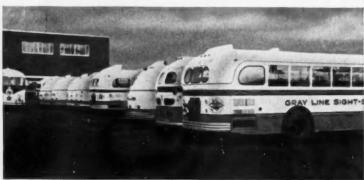
#### Only .001" wear in 150,000 miles using RPM DELO



RPM DELO Special Lubricating Oil helps Gray Line Tours of Salt Lake Transportation, Inc. withstand punishing low-speed operation required in sightseeing. After more than 150,000 motor miles at 5 to 10 miles per hour, this GMC piston (above) is still usable—shows less than .001 inch wear.



Lead Mechanic Jay Fulmer (above) says, "RPM DELO Special keeps our engines really clean. When we open them up there's no sludge...rings are never clogged. It ended our bearing troubles, too. This GMC 503 has run more than 270,000 motor miles and still has original rod and main bearings!"



Gray Line Fleet consists of 22 Crown, Flxible and Gillig buses, ranging from new to 10 years old. Running at an average speed of 5 to 10 miles per hour, with lots of idling, buses get hardest use carrying sightseers during tourist season. In winter they carry



skiers to resorts at Brighton and Alta. High altitudes, engine compression-braking, heavy loads all add to engine lubrication problems, yet RPM DELO Special Oil keeps engines in good condition with minimum wear. Firm has used RPM DELO Special since 1947.

TRADEMARK "RPM DELO" AND CHEVRON DESIGN REG. U.S. PAT. OFF

STANDARD OIL COMPANY OF CALIFORNIA, San Francisco 20
THE CALIFORNIA OIL COMPANY, Perth Amboy, New Jersey

#### Why RPM DELO Special Oil reduces wear—prolongs engine life

- Metal-adhesion qualities keep oil on engine parts, running or idle
- Anti-oxidant resists formation of lacquer
- Detergent keeps parts clean
- Special compounds prevent corrosion of bearing metal
- Inhibitor resists foaming



For More Information about this or other petroleum products or the name of your nearest distributor, write or call any of the companies listed below.

STANDARD OIL COMPANY OF TEXAS, El Paso The California Company, Denver 1, Colorado

COMMERCIAL CAR JOURNAL, July, 1959



#### soaks up extra-rough road shock

More than ever, you increase driver efficiency, productivity and satisfaction with this new "Level-Ride" 80 Suspension Seat. First, it has a contoured back to cradle the driver, add back support where it helps, and further reduce back slap.

More important, this new "Level-Ride" 80 features a built-in shock absorber. This shock absorber soaks up severe jolts and jars from extra-rough roads, detours, bumpy railroad tracks, chuck holes. It makes sure the driver is completely stabilized at the wheel, on the road and around loading docks... prevents topping and bottom-

ing of the seat regardless of road conditions.

Now a Bostrom "Level-Ride" 80 Seat removes more than 80% of road shock and vibration—truly gives drivers a passenger-car ride.

Then for an optional comfort bonus, you may order arm rests for "Level-Ride" 80 Seats—easily installed on either side of the seat, easy to fold out of the way.

This new "Level-Ride" 80 Suspension Seat is available on all makes of new trucks and as replacements on your present trucks. See your truck dealer or Bostrom distributor.

Want a demonstration? Write and we'll arrange one for you.



**BOSTROM CORPORATION** 

133 West Oregon Street, Milwaukee 4, Wisconsin



# Now...for TRUCKS—"RED CODED" Johns-Manville 4-Star Brake Blocks

These J-M 2500 Blocks deliver faster braking—top all-around performance

Now you can get maximum economy and safety at today's higher speeds and heavier payloads with these J-M blocks designed especially for heavy-duty truck and trailer service . . . and coded with red-edge markings for quick identification, foolproof replacement.

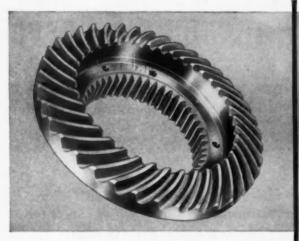
Studying the requirements of heavy-duty trucks under all operating conditions was the first step taken by Johns-Manville friction experts in creating J-M Style 2500 Blocks. This was followed with intensive product research and development. The result: an advanced block construction that prevents glazing and the related problem of heat-checking of drums. And since J-M 2500 is also free from erratics and water-fade, it delivers uniformly stable friction under variable weight loadings, temperatures and moisture conditions.

Take full advantage of the free J-M Brake Advisory Service for fleet operators . . . and let a J-M field engineer recommend how you can best utilize Style 2500 Blocks. He's an expert when it comes to efficiency. Just write or call Johns-Manville Brake Advisory Service, Box 14, N.Y. 16, N.Y. In Canada: Port Credit, Ontario.

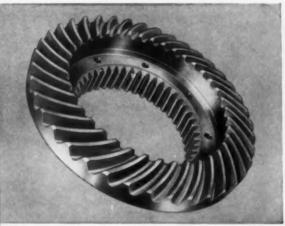


#### JOHNS-MANVILLE

#### They May Look Alike ... but they're Not!



Replacement Ring-Gear Made by Eaton—Axle Division



Replacement Ring-Gear Not Made by Eaton

## Only <u>Genuine Eaton Axle</u> Service Parts are Identical to the Original Production Components

Even Eaton Axle parts may wear out and require replacement. When this happens it is important that repairs be made with Genuine Eaton Axle Service Parts. They are identical to the original production components in design, metallurgy, heat treatment, and quality of finish—made to run together with the other axle parts. Eaton replacement parts are held to the rigid quality standards established for axle components and will deliver the same dependable, low-cost kind of service. So when, after thousands of miles of trouble-free operation, it may become necessary to replace worn parts in an Eaton Axle, it's most economical to make these replacements with Genuine Eaton Axle Service Parts.

MORE THAN TWO MILLION



IN TRUCKS TODAY

EATON

MANUFACTURING COMPANY
CLEVELAND, OHIO

PRODUCTS: Engine Valves • Tappets • Hydraulic Valve Lifters • Valve Seat Inserts • Jet Engine Parts • Hydraulic Pumps
Truck and Trailer Axles • Truck Transmissions • Permanent Mold Iron Castings • Automotive Heaters and Air Conditioners
Fastening Devices • Cold Drawn Steel • Stampings • Forgings • Leaf and Coil Springs • Dynamatic Drives and Brakes
Powdered Metal Parts • Gears • Variable Speed Drives • Speed Reducers • Differentials • Centralized Lubrication Systems

#### Koenig rolls up 77,152 troublewith a Spicer 5-speed

# "OPERATION

Here's 77,152 miles of conclusive proof that Spicer transmissions are your best choice for economy, dependability, and top-flight performance. Be sure to specify Spicer with your next truck order.

# KOENIG KOENIG KOENIG

#### SPECIFICATIONS

Ford T-950 Serial No. 8706-X

Delivered September 17, 1957

Rated GCW-75,000-lb.

Wheelbase-156-in.

Engine-534-cu. in. SD V-8

Transmission — 5-speed Spicer 6352 with 3-speed Spicer 7231 Auxiliary All the facts shown here as to the service history of the Ford T-950 truck serial No. 8706-X used in the Koenig Coal and Supply Company's operation are true, to the best of my knowledge and belief.



Maintenance Superintendent Koenig Coal & Supply Company

Florence M. Fowler Notary Public Wayne County, Michigan

#### free miles transmission during FORD'S

# DURABILITY.".

"Operation Durability" proved to be one of Ford's best-guarded secrets. In a daring test . . . launched months before the start of production . . . prototype models of Ford's new Super Duty Trucks were placed in the hands of leading fleets for use in normal day-to-day operations.

One of the vehicles, a Ford T-950 tandem, was put to workhorse duty hauling sand and gravel from Koenig's gravel plant at Oxford, Michigan to their concrete batching plants in Detroit.

This T-950, equipped with a Spicer 5-speed transmission and a Spicer 3-speed auxiliary transmission, has a rated GCW of 75,000 lbs. Yet it consistently pulled loads of 105,000 lbs. . . . even up to 120,000 lbs. . . . winter and summer, over hilly terrain, and through metropolitan Detroit's congested traffic.

In this dramatic demonstration of stamina and durability, the Spicer combination has logged 77,152 miles . . . without one bit of downtime in over 18 months. This record performance is verified by the sworn statements of Koenig's fleet superintendent, as well as the Ford engineers who supervised the project. For, in this truly authentic test, no mechanic was allowed to replace even a bolt without reporting it to the Ford engineers.

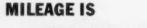


# DANA

Toledo 1, Ohio

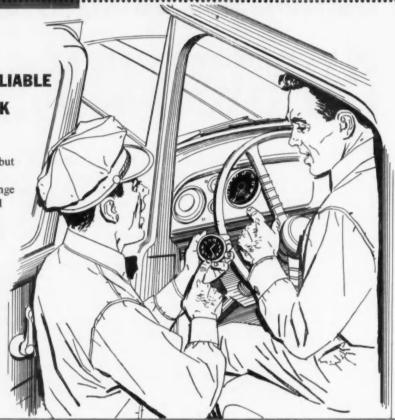
Serving Transportation—Transmissions Auxiliaries Universal Joints Clutches Propeller Shafts Power Take-Offs
Torque Converters Axles Powr-Lok Differentials Gear Boxes Forgings Stampings Frames Railway Drives
Many of these products are manufactured in Canada by Hayes Steel Products Limited, Merritton, Ontario

# LUBE LOGIC These sleepers can



**NOT ALWAYS A RELIABLE** OIL-CHANGE YARDSTICK

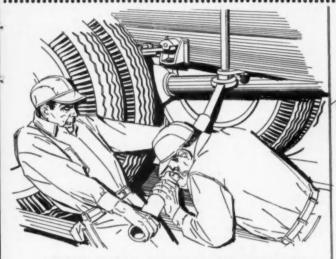
We may start an argument on this one, but the fact is that mileage is not always a reliable standard for determining oil-change intervals. Your method of change should depend on your type of operation. 500 miles of stop-and-start city driving, for example, takes a lot more out of an engine than 1,000 miles of turnpike. If your trucks stay mostly within the city limits, you can probably get a much better idea of when to change the oil by adding up the hours of driving. Your TAE\* can help you pick the oil-change yardstick that will give you maximum engine protection in your particular operation.



#### **EASY WAY TO AVOID BATTERY DEPOSITS**

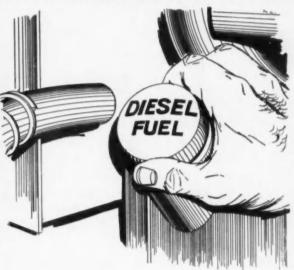
Don't let battery deposits climb up your cables; you may want to get them off someday. Easiest way to keep this from happening: paint battery terminals with Texaco Rustproof L. One application will keep them deposit-free for months.

#### stop the clock on maintenance time!



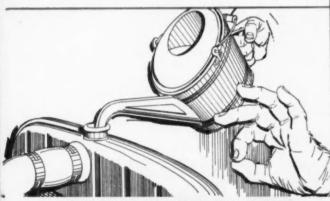
#### **HOW TO AVOID THAT FROZEN BOLT**

Ever spend six hours fighting a U-bolt that's decided to corrode itself tight? We've seen it happen, and it's an unforgettable experience—especially when we told them they could have ducked all that trouble for the price of a pack of gum. When they let us back in, we showed them how just a dash of Texaco Threadtex could keep their bolt rust-free permanently. Ask your TAE\* for a demonstration.



#### **IDENTIFY THE FUEL YOU WANT**

Let one sleepy service station attendant put gasoline in your diesel tank and you'll be "bailing out over Denver." It's happened. Best way to avoid its happening to you is to mark your fill cap "Diesel fuel" or "Gasoline." Then nobody should make any mistakes.



#### NEW WAY TO KEEP RUST OUT OF YOUR RADIATOR

Rust in your cooling system can start damaging your engine long before your radiator blows its top. Don't let it start. Some anti-freezes—such as Texaco P T—will do the job, but if you've already flushed your anti-freeze then it's time to pour in a little Texaco Soluble Oil C. It will give you summer-long protection for pennies. Your TAE\* can give you the details.

COMMERCIAL CAR JOURNAL, July, 1959



#### \*TEXACO AUTOMOTIVE ENGINEERS

Every month we'll bring you a batch of "sleepers"—little angles, so easy to overlook, where big savings in time and money can be made. But month in, month out, your local Texaco Automotive Engineer is the best source of money-saving lubrication ideas. Don't forget that "Lubrication is a major factor in cost control." Texaco Inc., Fleet Sales Division, 135 East 42nd Street, Dept. CCJ-40.

# 80 million miles with ASF...

That's the eight year record at Red Star ...

#### Stuart Sweet,

Fleet Maintenance Supervisor, has specified ASF Safety 5th Wheels as standard equipment for the Red Star Fleet.



"That's the one we've been looking for!" said Stuart Sweet, Fleet Maintenance Supervisor of Red Star Lines, the first time he got a good look at an ASF 5th Wheel. That was in 1950. Since then, that opinion has been justified many times over by more than 80 million miles traveled on ASF 5th Wheels without a single failure!

"We now have over 200 ASF wheels in service," says Mr. Sweet. "It's the only one we use, in fact, because it needs so little time out for service, costs so little to keep in tiptop shape, and requires such a small parts inventory. That lock design with rubber buffer has cut our maintenance costs to the bone." Safety, service, savings... the proved ability to stand up to any kind of service year after year and do it at lowest possible cost... reasons enough to standardize on ASF 5th Wheels in any fleet. The records prove there's not another 5th wheel that can touch it. See your nearest ASF distributor or write American Steel

Foundries, Hammond Division, Hammond, Indiana.



#### Exclusive ASF Features give longer wheel life... cut maintenance costs.



Jaws grip kingpin at top...give ASF the lowest bending leverage of any 5th wheel made.



3000-lb. jaw "compression grip" eliminates slack and backlash. Simple service shim compensates for wear.



Heavy trunnion-type brackets carry the load on 26-sq. in. of bearing area ... eliminate difficulties found in pin and shaft designs.

and never a 5th wheel failure!

TB9 RED STAR EXPRESS

NES

550

One of 100 new tractors now being delivered to Red Star. All will be equipped with AS5 5th Wheels requiring no mounting plate. This progressive fleet operates some 500 places of equipment to provide the heat service in New York and New Jersey.

Make an investment in safety . . .

with



ASF) safety 5th wheels

A product of American Steel Foundries, Hammond, Indiana

# DEPENDABLE RING INSTALLATIONS..

reduce operating and maintenance costs

To merit the continued confidence of fleet operators. Perfect Circle provides for dependability through:

## Manufacturing craftsmanship

to assure uniform perfection in the rings delivered to the installing mechanic...to assure uniformly satisfactory initial performance.

## Engineering skill

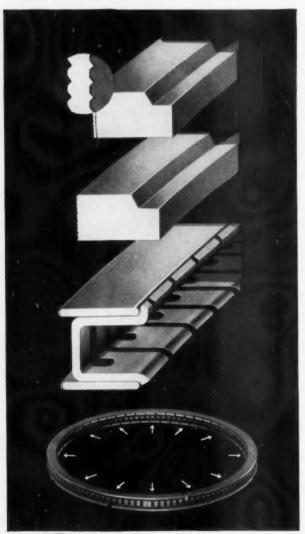
to assure consistently lowest rate of wear...to assure consistently longest effective life.

Other reasons why leading fleet operators say PERFECT CIRCLE all the way!

Power Service products that simplify maintenance operations, economically extend engine life.

Information Services provided through Doctor of Motors Clinics and specialized fleet technical assistance.

New Product Leadership that assures customers of the most advanced products progressive engineering can provide.



Hagerstown, Indiana



In Canada: Don Mills, Ontario

COMMERCIAL CAR JOURNAL, July, 1959



JULY 1959 FLEET HIGHLIGHTS as reported by Commercial Car Journal

#### ICC Streamlines Parking Brake Safety Regs

Middle of last month, Interstate Commerce Commission released new wording for Sections 193.40 and 193.41 of its Safety Regulations. Net effect is to streamline parking brake requirements. Emphasis is on what the brakes should do, less on how they should do it. Net effect is to let fleet operators take advantage of new equipment being offered. Full text of the revised regs appears on page 146, this issue. You have until Dec. 31, 1959, to comply.

## Excise Tax Bill Ducks Highway Money Problem

Not until the day they were due to expire—June 30—did Congress send to the White House its bill extending corporation income and excise taxes at "war time" levels for another year. Defeated were proposals to (1) increase the federal fuel tax or (2) earmark all highway-user excises for highway building. Action leaves still to be solved the problem of where to find the money to keep the program on schedule for at least the next two years. (For details, see page 103, this issue.) Still pending and sure to be the subject of hot debate this month was the highway authorization bill. Some financing scheme will have to be included in it. Despite strong highway-user opposition, it could be the fuel tax boost of  $1\frac{1}{2}$ ¢ a gal. Strong pressure is being brought by President Eisenhower for this . . . with indications he will veto any other solution. Said he last month concerning either borrowing or using all highway excise taxes as a means of finding the necessary dollars, "Either of these alternatives would be unacceptable to me."

## Railroads Show Net Income Increase Despite Traffic Loss

Do you think the railroads are going bankrupt? Not so, says the Dept. of Commerce: "For other-than-Eastern territory, net income after taxes has shown some general upward trend during most of the postwar period. This made possible a substantial rise in stockholders equity—around 50 per cent . . . the ratio of debt to total investment has shown a considerable decline." The report also points out that 30 years ago, railroads hauled 75 per cent of intercity ton-miles as compared to somewhat under 50 per cent today.

## Should Railroads Be Granted Unrestricted Trucking Rights?

A Senate Transportation subcommittee began hearings late last month on four bills that would permit one type of carrier to engage in other forms of transportation without the present restrictions imposed by the Interstate Commerce Act. Assn. of American Railroads says such a move would benefit transportation . . . by providing financial stability through diversification . . . by lowering costs through more efficient and more economical use of all transport facilities and equipment . . . by promoting healthy competition. Dept. of Commerce says it has the question under study at the present time and "opposes enactment of any of these bills at this time, . . ."

# **DETROIT DISPATCH**

stainless steel for commercial vehicle components is being pushed by Allegheny Ludlum Steel Corp. Under test are several versions of a stainless steel muffler. Just delivered are stainless steel bumpers for 60 buses being built by Mack. Principal advantage of stainless is its resistance to corrosion, giving longer life and better appearance.

**REO IS** latest truck maker to adapt the Allison "Torqmatic" automatic transmission to its line. To be called the "ReoMatic," it has been matched to Reo's OH170, OH185 and OV235 engines.

AIR BRAKE SYSTEM FOR passenger cars and trucks for fleet shop installation is available from Kelsey-Hayes Co. Hydraulic pistons provide the braking push but are air or vacuum-actuated. Separate hydraulic systems are provided on front and on rear wheels so if one system fails, the other remains operative. A deceleration sensing device on rear brakes gives maximum braking just short of the skid point.

NATIONAL AUTOMOBILE SHOW IN Detroit next year is now official. Place: Cobo Hall. Dates: Oct. 15-23, 1960 (exhibit hall won't be finished until that time). There'll be plenty of trucks on display in addition to the '61 cars. Although there's no show scheduled for this fall, you can look for almost all the 1960 models to be announced in October.

**EXHAUST GAS** air pollution elimination through improved muffler design continues to get attention. For cars, Chrysler and Thompson-Ramo-Woolridge are testing a unit with an exhaust afterburner. Air is added to the exhaust with an auxiliary pump. A heat exchanger raises the temperature of the air/exhaust mixture to the point where rapid and complete combustion takes place.

ANOTHER MODEL JUST announced is a "cataltyic" exhaust purifier. Its maker, Oxy-Catalyst, says it solves the problem of finding a unit whose catalyst will not be prematurely destroyed by the lead present in almost all gasoline brands.

# **WASHINGTON WATCH**

SAFETY REG PROPOSALS affecting driver time and daily vehicle miles (June, page 186) are tentatively set for hearings early in November. In the meantime, you can look for a stepped-up ICC road check program . . . with emphasis on this aspect of the Safety Regs.

UNITED PARCEL SERVICE HAS been granted extensive common carrier general commodity rights covering New England and the New York City metropolitan area. Operation is limited to shipments totalling 100 lb or less. Individual packages cannot exceed 50 lb or measure over 108 in. in length plus girth. Nor can the service be offered to retail stores for interstore shipments or customer deliveries. These would still be handled under UPS's contract carrier authority.

MICROWAVE APPLICATION BY Central Freight Lines has become subject of a hot fight. It's opposed by Southwestern Bell Telephone and Western Union. Bell's position is that the appli-

cation should be denied, leaving to Bell the decision whether or not it will lease microwave facilities to a motor carrier. Both Central and ATA take a dim view of such a stand. Result: Whatever the outcome of the present hearings, the question seems headed for the Supreme Court.

# ATA'S EXECUTIVE COMMITTEE MET last month, took action to. . . .

 Oppose those piggy-back operations which are actually motor carrier services requiring certificates of convenience and necessity.

 Help motor carriers hauling radioactive military cargoes obtain necessary insurance through agreements with the Dept. of Defense.

 Support amendment to Part 2, Sec.
 5 of the IC Act to make truck line mergers easier.

 Assist in development of safety standards for "double bottom" operation on toll roads.

 Investigate what action can be taken to alleviate burden of state taxation of interstate truck operation. REEFER TRAILERS CAN be rated by makers at Budd Co. in Philadelphia (Feb., page 86). OK was given by Truck-Trailer Manufacturers Assn. Rating Committee last month

MORE LIGHT INSIDE THE BUS IS being tried at Cleveland Transit. The experimental set-up was developed by General Electric. A transistorized inverter converts battery DC current to 3000-cycle AC current to operate 16 fluorescent lamps. Says GE, the test unit gives three to nine times the light, uses only three-fourths the wattage of filament bulb lighting.

PLATINUM ELECTRODE spark plugs are announced by GM's AC Spark Plug Division. Main advantage is resistance to fouling at continued low engine speeds. Longer life of "platinum" plug under such conditions is expected to off-set extra cost.

TRUCK TIRE REPLACEMENT sales are expected to reach 8.8 million this year. says U. S. Rubber Co. In addition, there'll be an estimated 8 million retreads put into service.

SHOULD HIGHWAY REVENUES, be used to give tax relief to railroads? New Jersey legislature meets later this month to debate the question. Involved are some \$631 million of "excess" revenue from New Jersey Turnpike toll highway operation over the next 28 years. There's some thought that bus lines may also share in the tax bene-

NAMES IN THE NEWS last month include

· Promotion of Alfred C. Finch to the position of manager, motor transport department, National Safety Council.

· Nomination of Neil J. Curry (California Cartage Co.) as the trucking industry's representative on the advisory committee for the Senate - authorized study of transportation by the Dept. of Commerce.

· Appointment of Welby Frantz (Eastern Express) to be chairman of ATA's new Containerization Committee.

· Resignation of Richard F. Mitchell from his post as an Interstate Commerce Commissioner.

## TRUCK TONNAGE

FOR THE SECOND month in a row, intercity truck tonnage has beat the same month a year ago by 25 per cent. Says ATA's Research Dept., all nine geographical regions showed gains in April this year over April. 1958. Largest of these were in three heavy tonnage areas . . . Middle Atlanticup 23.8 per cent, Centralup 36 per cent, Southernup 26.6 per cent.

FIRST	. (	QUARTI	ER	inte	ercity
truck	to	nnage	hit	a	new
high	on	ATA's	first	qu	arter

tonnage index . . . 206 as compared to the previous first guarter high of 189 set in 1957. (For details, see page 212, this issue.)

#### Month April 1959 1.05 0 1st Quarter '59 15.6 March, 1959 ... February, 1959 January, 1959 Full Year, 1958. - 11 4th Quarter '58 + 6.2 December, 1958. November, 1958. October +17.4 + 0.8 3rd Quarter '58 - 21 September, 1958 August, 1958 July, 1958 + 2.3 - 6.8 - 0.3

2.6

2nd Quarter '58

## TRUCK AND BUS PRODUCTION

	Weeks	Ending	Year to Date			
Make	June 13	June 6	1958	1968		
Chevrolet G. M. C. Diamond T Divos Dodge and Farge Ford F, W. D. International Mack Studebaker White Willys	9,219 1,912 144 80 1,539 7,912 11 3,566 276 280 437 2,363	8,760 1,847 110 80 1,460 8,014 20 3,580 318 258 443 2,282	193,310 42,613 3,062 1,748 30,391 161,366 450 66,830 8,031 6,323 9,206 85,617	137,550 29,300 2,521 1,332 27,234 106,487 676 45,596 6,958 5,146 8,149 38,021		
Other Trucks	80	80	1,748	1,443		
Total—Trucks	27,799 90	27,261 78	591,685 1,396	410,413 1,505		
Total-Trucks and Buses	27,889	27,336	593.081	411,996		

Source: Automobile Manufacturers Association.

## IN THIS ISSUE

- . . . HIGHWAY WEAR-How the AASHO Road Test affects future vehicle taxes, sizes and weights, page 100
- ... HIGHWAY COSTS-To make ends meet, Congress may decide this month to boost your taxes, page 103
- ... TWO-WAY RADIO-It works to promote safety as well as operating efficiency, page 108
- . . . BRAKE BALANCING-Two experts tell how they'd do the job on heavy-duty units, page 110
- ... GOVERNORS—This calm discussion of a hot subject comes from the SAE Summer Meeting, page 112
- ... ENGINE COOLING-From the same meeting, how to keep air out of the coolant . . . and why, page 116



# A QUICK LOOK AT WHAT'S COMING TO HELP WITH YOUR ADVANCE FLEET PLANNING

BARRIERS TO INTERSTATE truck operation better be removed by the states before the federal government takes over, warns a report under consideration by the Council of State Governments. Basic theme of the report goes like this: Increasing importance of truck transport to the nation's economy makes such barriers "less and less tolerable." States "must" find ways to reduce them. If they don't, federal action could make it impossible for them to collect sufficient highway-use taxes to meet "revenue needs." Possibility of such federal intervention "looms larger as time passes."

TWO TRAILER PLUS TRACTOR combinations are OK to use on the New York Thruway. Approval was given as of the first of this month. Toll will be double the regular charge . . . 10¢ a mile in most cases. Length limit is set at 98 ft overall, GTW at 127,400 lb, minimum speed at 20 mph, maximum at 50 mph. All equipment must have Thruway Authority permits . . . and drivers for the rigs be licensed by the Thruway. Driver must turn in to the toll collector a special equipment check list each time he enters the Thruway. Also, except when passing, "All tandems must keep 500 ft from other vehicles." Massachusetts Turnpike is expected to approve operation of such "doubles" with similar regulation, and Kansas Turnpike Authority is permitting their operation on an experimental basis.

FIRST FLEET TO announce regular runs with the two-trailer-plus-tractor combinations is Spector Freight System. Opening of the mile-long bridge across the Hudson River connecting the New York and Massachusetts toll roads will permit Spector to go the whole 500-mile distance between western New York and eastern Massachusetts without splitting the rigs. Run is scheduled for 17 hr. Latest power plant to be tried out is a special version of White's new 5000 Series just delivered to Spector. (For details on others used, see May, page 84.) The new 5464TD has sleeper cab, 12,000-lb capacity reverse Elliott-type front axle, 38,000-lb capacity Timken SQHD landem rear axle, 15½-in. 2-plate Dana clutch, 10-speed R96 Fuller RoadRanger with aluminum case, Cummins NRTO diesel engine rated at 335 hp at 2100 rpm, 900 ft lb torque at 1500 rpm with 14.5 to 1 compression ratio. Tractor is rated at 130,000 lb GTW.

**PRODUCTION** data for '59 continues, by and large, to increase its margin over '58. Helping the picture are healthy increases in tonnage hauled by truck, and vehicle scrappage. Some 575,000 commercial vehicles were scrapped last year, and indications are a new high will be reached this year—over 600,000.

In thousands of units, except bus sales are in actual numbers								Truck and Bus Tires					
		Truck trations		Factory Domestic		Trailer ments		Pactory Domestic	Replacement Shipments		Original Equip. Shipments		Inven-
	April	4 Months	April	4 Months	April	4 Months	April	4 Months	April	4 Months	April	4 Months	tory End of April
1959	91.8	295.9	98.9	357.3	6.5	23.0	251	704	907.0	3142.8	478.6	1577.3	3275.
1958	63.4	220.4	58.0	231.7	3.8	14.4	290	1191	665.9	2544.9	281.7	1081.6	3607.



# **ONLY ARMSTRONG**

gives you a road-gripping lug tire like this

Here's a truck tire with all the advantages of lug design — and none of the troublesome disadvantages. New shaped lugs have enormous pulling power. Labyrinth stone ejectors are highly effective, and permit narrower openings, more rubber on the road. More than four times as much siping (length times depth) than other leading

bar type tires! And the deep siping is Armstrong's patented interlocking type, that "kisses the road" to reduce scuffing wear, adds vastly to grip. Run your own test on this great new tire, and compare the results on all counts. No other lug tire like it.

"MIRACLE S-L"

ARMSTRONG RUBBER COMPANY - Home Office, West Haven, Conn.

# Gold Comet V-8 -0V 235 Gas -OV 235 Gas Brake hp: 235 @ 3400 rpm Torque: 412 @ 2400 rpm Bore: 4-1/8\* Stroke: 4-1/8\* Displacement: 440 cu, in. Other V-8's: 207 hp gasoline and 220 hp LP-Gas models also available.







# GOLD COMET truck engines

Only Reo offers replaceable
"wet-sleeve" cylinders in a complete
line of gasoline and LP-Gas engines
for heavy hauling. Here's the big
reason Gold Comets are first choice
for high road mileage, or operations where engine miles far
exceed chassis miles.

Reo's easily replaceable
"wet-sleeves" eliminate costly
reboring. This money-saving feature
assures like-new engine efficiency
throughout the lifetime of your truck.

For livelier power and continued high efficiency, buy the engine without an age limit. Sixes and V-8's in gasoline or LP-Gas for every use . . . in a rugged Reo truck built for the job.

#### Gold Comet Six-OH 185 Gas

Brake hp: 185 = 3400 rpm Torque: 320 @ 1200 rpm Bore: 4-1/4\* Stroke: 4-1/4\* Displacement: 362 cu. in.

Other Sixes: gasoline –170, 145, 130, and 110 hp

LP-Gas—160, 142 and 100 hp



REO DIVISION, The White Motor Company, Lansing, Mich.







# "Engineer Approved"

Highest Performance – Lowest Maintenance Cost

The PISTON used and Recommended by over 70% of all Truck and Bus Manufacturers



Experience Records of Operators Everywhere Prove Fleets Roll more Profitably with ZOLLNER Piston Equipment

Expertly engineered pistons make a big difference in engine performance—and operating costs. That's why Zollner "Engineer Approved" Pistons are the dominant specification of fleet operators. Engine manufacturers work hand-in-hand with Zollner engineers in the development of the most efficient piston for each heavy-duty engine service. Over 70% of all makes of trucks and buses are Zollner equipped. Only when you use Zollner can you be sure that your piston equipment is expertly designed, precision-made and engineer-approved for utmost performance and economy of operation. Profit by specifying Zollner, always.

ZOLLNER
Always
Specify
PISTONS

HEAVY DUTY PISTONS by

OLLNER

ZOLLNER CORPORATION . FORT WAYNE, INDIANA



-even for seconds

Give your drivers the protection of

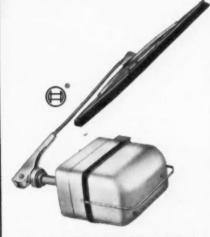
# ROBERT BOSCH Electric Windshield Wipers

Safe—ROBERT BOSCH Electric Windshield Wipers won't falter or hesitate for a second...even when the driver steps on the gas, or when going uphill. Safe—faithful in any weather: rain, snow, sleet, bitter cold. Safe—operates even if the car engine dies, because it's powered by its own electric motor. Ask your ROBERT BOSCH distributor, or write us for folder and full information.

## ROBERT BOSCH CORPORATION

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Illustrated is ROBERT BOSCH Heavy Duty Electric Windshield Wiper, TYPE 8. The most powerful wiper of its type. Will not burn out. Every wiper is subjected to a rugged trial run at the factory.

#### JULY

- 13-15-Truck Trailer Manufacturers Assn., 11th Summer Meeting, The Homestead, Hot Springs, Va.
- 16-18-Mississippi Truck Assn., Annual Convention, Buena Vista Hotel, Biloxi, Miss.
- 23-25-National Conference of State Truck Assn. Managers, American Trucking Assns., Cavalier Hotel, Virginia Beach, Va.

#### AUGUST

- 10-13-Society of Automotive Engineers, National West Coast Meeting, Hotel Georgia, Vancouver, B. C.
- 20-22-Tri-State Safe Driver Truck Roadeo, sponsored by the Pennsylvania, New Jersey, and Delaware Motor Truck Assns., New Castle County Airport, Wilmington, Del.

#### SEPTEMBER

- 14-17-National Auto Accessory and Parts Exhibit, Las Vegas Hall, Las Vegas, Nev.
- 14-17-Society of Automotive Engineers, National Farm, Construction and Industrial Machinery Meeting, Production Forum and Display, Milwaukee Auditorium, Milwaukee, Wis.
- 24-26-American Trucking Assn., National Truck Roadeo, Coliseum of the Kentucky Exposition Center, Louisville, Ky.

#### OCTOBER

- 5-7-Truck Body and Equipment Assn., Annual Convention and Exhibit, Sherman Hotel, Chicago, Ill.
- 15-20-Regular Common Carrier Conference, American Trucking Assns. Annual Membership Meeting, Los Angeles, Cal.
- 18-24-American Trucking Assns., Annual Convention, Statler and Biltmore Hotels, Los Angeles, Cal.
- 19-23-National Safety Congress and Exposition, Chicago, Ill.
- 26-28-National Lubricating Grease Institute, 27th Annual Meeting, Roosevelt Hotel, New Orleans, La.
- 26-28-Society of Automotive Engineers, National Transportation Meeting. La Salle Hotel, Chicago, Ill.
- 27-28-Society of Automotive Engineers, National Diesel Meeting, La Salle Hotel, Chicago, Ill.
- 28-30-Society of Automotive Engineers, National Fuels and Lubricants Meeting, La Salle Hotel, Chicago, Ill.
- 28-30-Automotive Parts Rebuilders Assn., 12th Annual Convention and Trade Show, Hotel Roosevelt, New Orleans, La.

#### NOVEMBER

- 2-5-Air-Conditioning and Refrigeration Institute, 11th Exposition. Atlantic City, N. J.
- 2-5-Automotive Warehouse Distributors Assn., Annual Convention. Muchlebach Hotel, Kansas City, Mo.
- 16-19-International Soft Drink Industry Exposition, sponsored by American Bottlers of Carbonated Beverages, St. Louis, Mo.



"SADDLE MASTER" SAFETY TANK



Maximum capacity within the limits of wheel base of tractor . All safety features including stress-relieving,

embossed head . Five inch depth lateral box to allow sufficient clearance for all makes of trailers . Available as standard in two sizes · I.C.C. approved

PRIOR PRODUCTS, INC. Dallas, Texas P. O. Box 1728



# FLEET-CHECK SYSTEM

A service designed to cut costs in fleet operation

Esso's new Fleet-Check System can help you maintain a proper lubrication schedule that will pay off with lower maintenance costs. It provides for accurate cost control records and takes all the guesswork out of preventive maintenance. Regardless of the type and make of equipment you own, you can tell at a glance what needs to be lubricated, when, and with what type and grade of lubricant. There's a Fleet-Check System for your fleet, whether it be trucks or buses. This package has everything you need — including lubrication charts, maintenance service folders, work order forms, driver

An experienced Esso Representative will be glad to set up a Fleet-Check System in your shop — and offer other technical assistance.

Just contact your nearest Esso office, or write: Fleet Engineering Service, Esso Standard Oil Company, 15 West 51st Street, New York 19, N. Y.

report forms, fuel and lubricant consumption records.

(Esso)

In industry after industry... ESSO RESEARCH works wonders with oil

# GMC TRUCKS ELIMINATE NON-PROFIT



# WEIGHT- and WAIT!

#### NO EXCESSIVE WEIGHT!

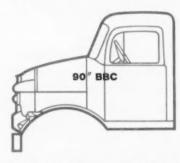
GMC is continually cutting "dead" weight . . . increasing payloads without sacrificing strength and durability. A few results are shown below.



This fabricated GMC frame weighs only ½ as much as comparable channel-type frames. Saves 300 pounds, yet has 30 times more rigidity. GMC heat-treated frames add up to 860 extra payload pounds.



GMC Truck diesel engines are lightest weight per horsepower. Compared to others, "dead" weight is cut by as much as 334 pounds.



Even with all their extra strength and durability, GMC cabs still eliminate needless weight. For example, the 90" cab on the D860 is 385 pounds lighter than other makes.

#### NO EXPENSIVE WAIT!

GMC Trucks are all truck, not "muscledup motor cars." Every part is truck-built to stay on the job and out of the shop... give longest, most dependable service. Take GMC Truck engines for example:





Forged, Tocco-hardened crankshafts in GMC engines have extremely hard, long-lasting bearing surfaces and softer cores for high torsional rigidity.

There's no premature valve failure in GMC engines with "free turn", sodium-cooled exhaust valves. Localized hot spots are prevented. Heat is transferred away from the valve heads more rapidly.



Precision-fitted pistons are also precision weighed to ½ oz. to assure balanced power. Rifle-drilled connecting rods guarantee positive lubrication of piston pins. Moraine M-400 bearings are the best you can get—last 7 times longer than all others.



The parlor lights were low when Looie got to his gal's place. He tip-toed in, grabbed, squeezed, and POW! The gal's ma socked him, right in the eye. Poor Looie! He was another victim of Glare Fatigue.

What's that? A TV announcer might call it "Tired Eyeballs." It's caused by too much bright sunlight. It can cost you up to half your normal night seeing ability. (Ask Looie!)

Dark glasses are the answer. The darker, the better. Wear 'em whenever you're out in the sun. And be sure to wear them on vacation. Spend a week in bright sunlight without them and it'll take your eyes a month to get back to normal.

Like Looie says: "Anything that can make me mistake Wide Winnie for Trim Tessie is bad, buddy, bad. To avoid it, I'll wear dark glasses six deep if I have to."



- IMMEDIATE OIL CONTROL
- NO MORE COME-BACKS

■ Want faster seating ring jobs? Want oil control in tapered, out-of-round or re-bored cylinders? Then you need Hastings Chrome-Vent oil rings. They seat 3 to 4 times faster than any other chrome rings made. They assure positive oil control right now—and for the life of the job.

The Hastings patented beveled chrome rail makes immediate fineline contact with the cylinder wall. It has less contact area to wear-in—takes less time to break-in.

Chrome-Vent gives at least 3 times greater chrome wearing surface, too—because the thick chrome cap extends *around* the bevel. And, with the lighter inner-spring made possible by the beveled design, it makes gentle, soft-pressure contact with any cylinder wall.

On your next ring job, call for Hastings—the product of replacement specialists—and be sure of good, trouble-free performance.

HASTINGS MANUFACTURING CO. · HASTINGS, MICHIGAN Hastings Ltd., Toronto

Piston Rings, Oil Filters, Casite Additives, Spark Plugs
Hastings Rings are covered by
U. S. Patent Nos. 2148997, 2511874, 2565042, 2712871



#### BEVELED CHROME-VENT

Rails make fineline contact with cylinder wall for a faster seat. Less area to wear-in means less time to break-in.



#### CONVENTIONAL CHROME RAIL

Originated by Hastings... now replaced by Hastings exclusive Beveled Chrome.

# HASTINGS

BEVELED CHROME-VENT PISTON RINGS

TOUGH on oil-pumping

GENTLE on cylinder walls



# Now AC offers widest selection of Spark Plugs



# in the commercial truck field!

# NOW you can fit the right spark plugs to your specific hauling needs ... and cut operating costs!

You don't have to take chances on your spark plugs being a little "too hot" or a little "too cold" for your trucks . . . or your hauling jobs.

The complete AC line of commercial plugs contains the precise plugs for each of your trucks, and each of your hauling jobs. The line includes ten special 14 MM plugs for Chevrolet, GMC and other popular trucks, and six 18 MM plugs for still other trucking operations. It's the widest selection of spark plugs in the industry . . . the result of years of research and millions of miles of testing.

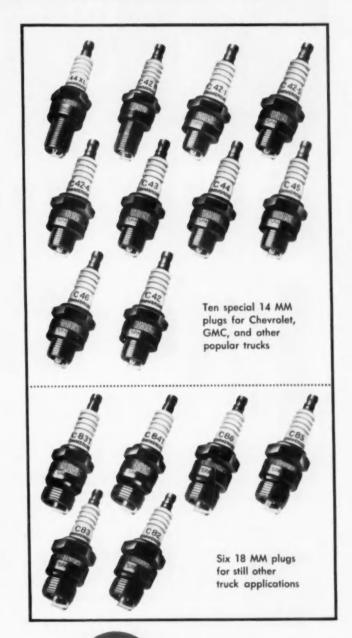
Carefully controlled tests with 44 fleets covering 2,260,000 miles, have proved that the right plug for the specific job gives greater operating efficiency, lower cost per mile. Check your spark plugs now. Make certain you're working the right plugs for maximum power and economy.

## AC engineers will give you a hand

Through years of experience fitting spark plugs to specific hauling jobs, AC has amassed a wealth of information to help cut your operating costs. To find out how this experience can be of value to you, call the nearest AC office.

New York, N. Y
Chicago, Ill ROgers Park 4-9600
Detroit, Mich TRinity 5-2630
Philadelphia, Pa
Los Angeles, Cal RAymond 3-5171
Atlanta, GeorgiaTRinity 5-0648
Dallas, Texas EMerson 8-5839
Kansas City, Mo JEfferson 1-7350
San Francisco, Cal Dlamond 2-6061
Cleveland, OhioSUperior 1-6930

AC SPARK PLUG 
THE ELECTRONICS DIVISION OF GENERAL MOTORS







# STOP MORE TONS MORE TIMES without maintenance!

# BRAKE DRUMS handle more payload more safely

Compare brake drum service costs PER TON-MILE STOP and you'll find that you get more safe stops with Reyco Brake Drums. Modern speeds, loads and traffic require drums that fully back up your brakes. Reyco Brake Drums are engineered to give the extra strength, durability and stopability that keep today's heavy, hurrying payloads on the go!



## SEE YOUR REYCO DEALER

Install Reyco Brake Drums and handle more payload more safely without maintenance.

SALES AND SERVICE NATION WIDE

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REYNOLDS MANUFACTURING CO.

SPRINGFIELD, MISSOURI

YOU CAN RELY ON



Better products, faster, from your National Seal jobber:



# National deliberately does a "half-way" job on leather to make a <u>better</u> automotive seal



Exclusive Micro-Torc process seals outer face to guard bearing; inner face absorbs the lubricant a seal needs

Natural leather is too porous—must be processed to make it seal oil. So National does a "half-way" job on leather to make it seal better, last much longer.

Micro-Torc oil seals are impregnated part-way through. The coated side seals in oil or grease . . . seals out dirt, dust and water. The uncoated side remains naturally porous . . . absorbs lubricant to keep the leather flexible and sealing properly.

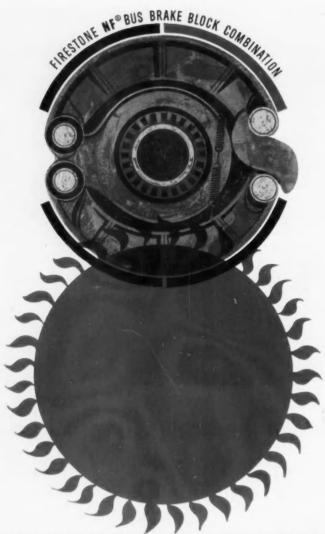
In leather or synthetic rubber, National oil seals guard wheel bearings and brake linings; keep lubricant in its place everywhere on trucks, tractors, and trailers. Your National jobber gives off-the-shelf delivery on a full line of National oil seals.

# NATIONAL OIL SEALS

FEDERAL-MOGUL SERVICE

DIVISION OF FEDERAL-MOGUL-BOWER BEARINGS, INC. . DETROIT 13, MICHIGAN





## FIRESTONE NF BUS BRAKE BLOCK COMBINATION IS GUARANTEED TO STOP HEAT FADE IN BUS BRAKES!

Firestone NF Bus Brake Block Combination Doubles Brake Safety, Cuts Maintenance Costs. Gives More Miles Between Reline Jobs!

Firestone's NF ( No Fade) bus brake block combination is guaranteed to stop bus brake heat fade and deliver reliable, positive braking action at all times. And here's how Firestone does it.

Firestone's exclusive friction formula fortifies NF bus brake blocks to withstand temperatures up to 1,300° F. -up to twice the fade limit of ordinary brake blocks! No other brake block combination stands up to the daily punishment of stop-and-go grinds like Firestone NF blocks. Install them and you'll find your buses cover more miles between relining jobs, maintenance costs go down and drum breakage is drastically reduced.

Find out more about the Firestone NF bus brake block combination. It's precision made for modern high-speed conditions, and it's guaranteed to stop bus brake heat fade in the toughest fleet operations. Contact your Firestone representative today or write The Firestone Tire & Rubber Company, Akron, Ohio.

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ALL THE WAY WITH ...











BRAKE LINING SPARK PLUGS



# RENT IT FROM HERTZ

Overloading trucks never pays. Neither does tying up capital in owned trucks that may sit idle, waiting for peak delivery periods.

Renting Hertz trucks solves both problems. You get the added capacity you need for extra jobs, without investing a dime of capital.

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# fleetman's LIBRARY

REVIEWING THE BEST IN CURRENT PUBLICATIONS ON MAINTENANCE, EQUIPMENT AND SAFETY OF INTEREST TO TRUCK, BUS AND CONSTRUCTION FLEET OPERATORS

## **New Driver's Manual Helps Fleets**

The latest edition of the White Driver's Manual is offered to fleets by the White Motor Co. In the 158-page manual there's information to help the driver conserve his equipment. It's based on the experience of good drivers, factory and field truck engineers and fleet supervisors. The manual was compiled with the aid of a nationwide study of drivers' problems and their solutions. It's offered for \$1.25.

Write the Sales Promotion Dept., The White Motor Co., 842 E. 79th St., Cleveland 1, Ohio.

#### Handbook Gives Useful Truck Data

A new "Truck Equipment Handbook" published by the H. S. Watson Co. contains a wealth of valuable information. Included in the handbook are complete truck and equipment definitions, formulas for determining horsepower, torque, gear ratios and load distribution. Other sections include tire size, pressure and capacity tables, and auxiliary truck equipment such as loaders, pumps and power take-offs. Price is \$1.00.

Write to H. S. Watson Co., 1316 67th St., Emeryville, Cal. Ask for Truck Handbook No. W-93.

## Move Dangerous Cargoes with Care

ATA's Safety Dept. has published a handbook on dangerous cargo handling. Purpose is to help motor carriers which haul cargoes listed as dangerous in ICC regulations. The 38-page guide has all the dope you need to know for proper handling and transporting of dangerous cargoes, plus ICC required vehicle markings. The handbook is yours for \$1.00. Write for your copy.

Write Dept. of Safety, American Trucking Assns., 1424
16th St., N.W., Washington 6, D. C.

## **How to Recondition Valves and Seats**

Black & Decker's newest shop handbook shows the principles of reconditioning valves and valve seats. It is written for mechanics and shop foremen, give details on valve train operation, adjustments and reconditioning. The handbook is well illustrated, shows close-up photos of valve grinding, refacing valve seats and other valve work.

For a free copy, write Black & Decker Mfg. Co., Tow-

## What is Federal-Aid for Highways?

The above question and many others are answered in this informative booklet. Fully titled "Federal-Aid for Highways" (revised edition), the booklet explains the structure and operation of the Federal-aid highway system, what the different types of aid are, and how the money is apportioned among the states. As a highway user, you'll find the booklet well worth reading.

For your free copy, write the National Highway Users Conference, National Press Bldg., Washington 4, D. C.

## How to Service Hydraulic Brakes

This brake service manual covers nine different makes of hydraulic systems used on passenger cars—including power brakes. The 320-page manual is well illustrated, covers operation, trouble shooting, major and minor adjustments, and wheel and master cylinder service. It's specially bound for on-the-job use. Full title is "Standard Hydraulic and Power Brake Service Manual." Price is \$7.50.

The manual is available from The Paul-Marsh Co., 520 W. Fort St., Detroit 26, Mich.

## **New Book Helps Traffic Managers**

A newly revised book has the latest information on modern traffic management. It's called "Traffic Management" and is written by Dr. Charles A. Taff, Professor of Transportation, College of Business and Public Administration at the University of Maryland. New subjects covered in great detail include use of data processing equipment and the pros and cons of vehicle leasing versus owning equipment. The book sells for \$8.70.

The publisher is Richard D. Irwin, Inc., Homewood, Ill.

## **Wall Chart Boosts Grinding Safety**

Ten "do's and don'ts" of grinding wheel safety are offered free to fleet operators on a new two-color wall chart. Easy to read, and easy to remember, the chart is designed for hanging on or near grinding machines. It will give your mechanics a brief safety reminder every time they start to do any grinding work. Write for your free cony.

The address is: The Carborundum Co., Walmore Rd., Niagara Falls, N. Y.

Don't miss listings of current literature from fleet suppliers in the New Products Section of this issue



# Extra Safety and Better Braking for your Auxiliary Vehicles

# ORLD BESTOS ... manufacturers of the

world famous RED BLOCK COMBINATION Brake Blocks used by leading fleets from coast to coast-now offers you the same extra quality in Prescribed Friction, Dry-Mix, Bonded Shoe Sets for passenger cars and light and medium trucks . . .

for service trucks, local delivery trucks, lum-weight vans and similar vehicles, In BONDED SHOE SETS or packaged segments for riveting.

(Prescribed Friction Truck)

for company cars, station wagons, and light delivery vehicles built on passenger car sis. In BONDED SHOE SETS or packaged segments for riveting.

(Prescribed Friction)

• World Bestos "PFT" and "PF" are premium quality, dry-mix brake lining sets engineered for each make and model car and truck. Install "PFT" on trucks ... "PF" on cars ... and get braking efficiency comparable to that on your "payload" vehicles. It'll pay off in reduced maintenance costs, longer lining life and greater brake safety.

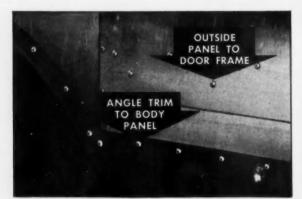
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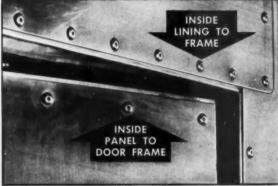
1989 WORLD BESTON

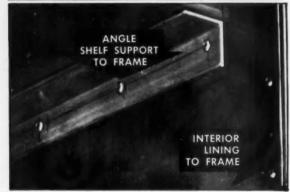
# 9 MORE WAYS SOUTHCO RIVETS SAVE TIME AND IMPROVE **BODY BUILDING**













Southco Drive Rivets are easy, fast and economical to install. No special tools are needed, no clipping stems, buffing heads or inserting plugs. Just hit the pin with a hammer . . . the rivet's in.

#### FIVE TYPES FOR EVERY PURPOSE 100° CSK













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NERS IMPROVE TRUCK BODY, TRAILER AND BUS CONSTRUCTION



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CLEAN EQUIPMENT IS GOOD ADVERTISING

# Brushes filled with Du Pont TYNEX

NYLON FILAMENT

- -last longer
  - -save time
- -- save money

... as these fleet owners testify





MORE EFFICIENT, LAST LONGER. United Parcel Service, New York Operations, changed last year from spray-washing to an automatic washer using brushes filled with TYNEX. Proved efficient and durable, brushes filled with TYNEX have been specified for the company's newest installation in New England.



LITTLE WEAR AFTER 12 MONTHS. This trailer just finished an ocean trip and is being washed at the Pan-Atlantic Steamship Terminal, Port Newark, New Jersey. Since TYNEX resists salt and abrasion, the brushes show little wear after 12 months of constant use.





SIX TIMES LONGER WEAR. Until switching to brushes filled with TYNEX, the Chicago Express Co., Bound Brook, N. J., changed brushes in their mobile washers every two months. Now, with long-lasting brushes of TYNEX, change-over is required only once every 12 months.



SAVES \$900 PER WEEK. Motor Cargo, Inc., Akron, Ohio, has saved 90 man-hours daily, or \$900 weekly, by changing from hand washing to automatic equipment using brushes filled with TYNEX. Although 60 trucks are washed daily, brushes last 18 months before replacement.



**CUTS COST \$3.50 PER TRAILER.** It used to cost Brown Express, San Antonio, Texas, \$4.00 to wash a single trailer by hand. By using mobile washers equipped with brushes filled with TYNEX, the company now pays only 50° to wash a truck...a saving of \$3.50 each.



WASHES FIVE TIMES MORE TRAILERS. Mobile washers, using flexible, long-lasting brushes filled with TYNEX, make it possible for one man to wash 80 trailers each day at the Kroger Co., Columbus, Ohio. It used to take a man an entire day to wash only 16 trailers.

# TYNEX BYLON FILAMENT

TYNEX is the registered trademark for Du Pont nylon filament.



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

#### **Excellent** bend recovery

Superior abrasion resistance

# Here's why brushes filled with TYNEX last so much longer and save you money!

Du Pont TYNEX nylon filament is a man-made material developed in the Du Pont laboratories. It has all the properties desired in a brush-filling material, and its high quality is constant. This is why brushes filled with TYNEX consistently give you maximum durability and performance at lowest over-all cost.

Compare the advantages of TYNEX with those of any other brush material: superior abrasion resistance, even against rough trailer struts...resistance to chemical cleaning agents, salt, grease and oil...excellent bend recovery and low moisture absorption, which eliminate matting. It all adds up to moneysaving durability and thorough cleaning, time after time.

If you are plagued by all-too-frequent brush replacements, specify brushes filled with TYNEX the next time you order from your supplier. If you don't already wash your fleet mechanically, but plan to, be sure brushes filled with TYNEX are part of your new equipment.

#### Resist chemical attack

Du Pont does not make brushes for industry, but rather supplies leading brush manufacturers with Tynex nylon filaments for brush filling. Tynex filaments are available in tapered or level form, crimped or uncrimped, and in diameters so thin it can be used to make the softest of complexion brushes and so thick it can be used in mechanical street-sweeping brooms. In between there is a wide range of diameters to meet the most exacting brush requirements.

For more information about Tynex, contact your brush supplier or write: E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Dept. - "TYNEX"

350 Fifth Avenue New York, New York Phone: LOngacre 3-6400 2930 E. 44th Street Los Angeles, California Phone: LUdlow 2-6464

7250 N. Cicero Ave., Lincolnwood Chicago, Illinois Phone: INdependence 3-7250

Low moisture absorption

Durable...last far longer



TYNEX is the registered trademark for Du Pont nylon filament.



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Owner of an all-Fruehauf fleet, Commercial Motor Freight, Inc., of Columbus, Ohio, declares: "We find Stainless vans the most inexpensive to own because operating figures are lower, hauling profits correspondingly higher."



## FRUEHAUF LIFETIME STAINLESS

Operators Find It's The Most Economical Van To Own!

THE NEW "Lifetime Trailer"-Fruehauf's Stainless Volume\* Van-combines the lasting qualities of stainless steel with all the advantages of Volume Van design. For this reason, satisfied operators all over America are switching to Stainless and increasing their hauling profits, cutting their operating costs.

Built of corrosion-proof materials with Fruehauf's modern precision machinery, the Stainless Volume AVan has been laboratory-tested and operator-tested to insure lowest operating and maintenance costs and highest profit potential. Its handsome appearance also gives you extra advertising value. Coupled with extremely long life and high trade-in value, this kind of permanent top performance produces increased earning power for you.

That's why the new Stainless Volume Van actually costs much less. You can own it or lease it, but you can't out-earn it. See it now at your nearby Fruehauf Branch.



For Forty-Four Years - More Fruehauf Trailers On The Road Than Any Other Make! World's Largest Builder of Truck-Trailers

# FRUEHAUF TRAILER COMPANY 10940 Harper Avenue Detroit 32, Michigan

SEND FREE ILLUSTRATED DETAILS AT ONCE ON THE NEW "LIFETIME STAINLESS"

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# **1959 New Truck Registrations**

STATE		Breck- way	Chev- rolet	Dia- mend T	Dodge	Ford	G.M.C.	Interna- tional	Mack	Stude- baker	White	Willys Jeep	Willys Truck	Others	Total
Mabama	. /April		598 2,221	3	65 278	471	148	161	24	4	14	7	11	46	1,5
Maska	4 Mos. April	1	2,221	18	278	1,570	536 15	520 11	24 133	20	84	23	31 5	224 11	5,60
rizona	4 Mos. April		67		17	84	52	30	*******	10	1		11	34 49	21
	4 Mos.	********	1,544	i	88 275	352 1,008	130 332	99 245	10	23	5 28	22 42	23 75	130	1.3
rkansas	April 4 Mos.		594 2,393	2 9	55 253	433 1,638	125 436	127 386	16	5 25	27	17	21	9 52	1,3
alifornia	April 4 Mos.	1	3,728 12,765	17 50	1,704	2,846	501 1,827	573 1,705	21	59 194	93 220	111 255	112 336	619 2,163	9,10
olorado	April 4 Mos.		569 1,864	2	131	385	119	87	59 22	13	4	45	80	59	1.5
ennecticut	April	*********	164		390 76	1,320 161	458 40	356 97	43 19	50	13 18	127	214	121	4,9
Pelaware	4 Mes. April	10	590 80	5	177	474 54	141 26	300 63	55 70	11	68	44	81	169 12	2,13
Strict of Columbia	4 Mes. April	6	252 50	6	72 16	147 63	75 24	159	133	3	27	6	12	38 22	9
lorida	4 Mos.		250	i	45	286	67	42	17		7	3	8	84	8
	April 4 Mos.	1	966 3,187	22 80	102 494	907 2,944	228 840	336 902	61 216	14 52	57 265	46 115	66 243	259 897	3,0
oorgia	April 4 Mos.	********	2,043	13	78 289	1,597	93 453	102 399	37 147	30	23 94	7 22	5 30	51 245	1,3
faho	April 4 Mos.	*******	214 781	*******	43 172	183 616	56 224	98	3	30 11	9	9	28 92	18 65	6
linois	April 4 Mos.		1,278	6	202	1,048	263	275 600	58	35 23	83	28 22	46	184	3.7
ndiana	April		4,402 720	83	778 122	3,773 610	966 139	1,896 350	199 33	82 60	303 65	107	213 25	609 68	13,4
rwa	4 Mos. April		2,391 637	38 14	466 77	2.040	560 119	1,015	132	193 15	165 25	29 10	93 19	186 58	7,3
Anna	4 Mos. April	********	2,292	60	349	595 2,034	383	936	65	60	63	26	70	177	6.5
actualis	4 Mos.	********	1,214 2,458	18	126 352	1,968	185 437	239 521	14 27	22 48	13 43	7 16	32 64	20 88	6.0
emiliky	April 4 Mos.	*******	1,738	1 2	47 166	359 1,247	160 429	146 411	19 56	8 24	20 43	13 42	12 45	36 119	1.3
oulolana	April 4 Mos.	1	783 2,850	4	102 279	711 2,160	128 520	188 529	33 66	11	21 42	10	11 41	72 227	2,0
faine	April	2	141	********	26	139	32	75	8	20 2	9	35 23	34	24	5
flaryland	4 Mos. April	10 7	403 388	11	71 82	416 348	101 116	212 194	17 50	11 2	17 29	59 10	109 15	80 62	1,5
fassachusetts	4 Mos. April	19	1,069 235	5	256 91	943 251	320 92	463 121	50 94	11 5	72 31	39 13	63 56	197 93	3,5
Nichigan	4 Mos. April	14	663	4	304	744	243	308	24 54	11	78	29 39	134	232	2,8
	4 Mos.		1,018 3,458	10 36	244 786	1,232	301 985	283 712	81 157	19 52	38 160	126	69 247	161 474	3,4
linnesota	April 4 Mos.		1,127	5 7	160 365	1,087 2,019	183 345	347 566	16 43	27 50	19 36	14	41 67	88 211	3,1
Nasissippi	April 4 Mos.	******	491	4	36	335	135 432	128	4	6		20 24 40	3	16	1,1
Alssauri	April	********	1,159	7	250 99	1,273 808	281	458 398	35 22	27 15	27	13 34	14 20	101 70	2,9
Aontana	4 Mos.		3,900 273	27	437 87	2,713	934 53	1,080 123	77 6	51 12	79 13	34	56 52	233 18	9,6
lebraska	4 Mos. April	********	876 523	1 10	247	750 435	213	342	9	38	18	41	171	71	2,7
levada	4 Mas.	*********	1,882	41	51 236	1,478	109 376	226 559	10	5 24	37 79	39	16 59	32 179	1,4
	April 4 Mos.		89 294	1	18 54	77 206	50 81	32 79		10		9 26	8 15	46 145	3
lew Hampshire	April 4 Mos.		186 271		81 92	147 214	54 69	110 137	12	9	1 5	11 24	49 79	-51 84	1,0
lew Jersey	April 4 Mos.	19	531	3	129	594	168	282	56 64	3	45	17	50	112	2,0
lew Mexico	April	92	1,923	40	461 43	1,934	571 68	828 63	274 5	20 11	191	83	176 34 71	473 20	7,0
lew York	4 Mos.	34	1,287	5 2	205 235	688 985	280 325	174 745	17	28	16 169	27 36	71 107	61 360	2,8
forth Carolina	4 Mos. April	117	3,447 778	21	889	3,152	965	2,131	334	9 34 22	571	208	514	1,263	13.6
	4 Mos.	********	2,836	17	400	663 2,492	146 725	207 645	55 235	64	50 157	29 60	14 67	53 260	7,9
forth Daketa	4 Mes.		196 676	2 5	33 146	220 640	139	83 258	3	6 14	2	3	4 26	17	1.9
)hio	April 4 Mos.	1 6	944 3,530	12 50	221 929	1,022	279	489	94	35	164	31	88	187	3,8
)klahoma	April		1,156	2	121	3,647 767	900 166	1,386	271 29	103	504 20	130	289 10	653 30 78	2.5
Oregon	4 Mos. April	********	2,706 475	6 12	251 139	1,976 413	407 87	500 135	47 25	28 16	44	18	22 64	84	6,0
Pennsylvania	4 Mes. April	19	1,576	23 17	328 244	1,282 932	299	363 698	66 212	58 20	100 152	74	217 140	358 152	4,6
hode Island	4 Mos. April	61	3,359	57	914	2,885	244 775	1,605	564	82	462	239	522	518	12,0
	4 Mes.		240	1	37 204	77 250	26 39	59 146	13 29	3	15	5 6	14	26 85	1.0
outh Carolina	April 4 Mos.	*******	1,347	5	72 196	275 994	62 235	79 260	84	8 16	15 38	17	13 31	137	3,3
outh Dakota	April 4 Mos.	*******	253 816	2	68 179	234 687	68	207		11	7	4	20	21	2,4
ennessee	April		801	3 4	89	532	204 183	409 177	147	32	19	19 12	49	42 52	2,0
exas	4 Mos. April	********	2,522	11 3	510 281	1,891	624 412	596 626	244 58	30 36 157	102	36 25	34 33 150	176 90	6,
Itah	14 Mos.		11,423 284	20	1,199	7,809 228	1,695	2,073	216	157	319 16	25 111 9	150 35	325 29	25,
ermont	4 Mos.		787 110	4	196	591	216	189	12	21	32	22 13	61	71	2,5
	A Brane	5	216	2	30 55	116 193	37 61	53 99	6	3 6	6	13	37 75	28 63	
/irginia		1	656 1,833	4 5	140 465	507 1,575	122 375	186 506	36 104	37 68	12 46	32 16 52	31 120	72 221	1.
Washington	April		427		91	372	153	187	25	9	7	.5	51	76	1.
West Virginia	4 Mos.	********	1,566 247	3	335 40	1,348 216	507 94	474 58	54 13	36	28 18	26 22 75 29	136 45	350 23	4,
Wisconsin	4 Mos. April	********	767 557	10	198 110	630 521	352 138	183 399	40	27 13	46 13	75	143	64 113	2,
Wyaming	4 Mos.	********	1,660	14	305	1,485	396	900	67	48	51	74	122	236	5.
	4 Mos.	*********	151 558	2	21 121	115 445	32 148	36 133	18	3 10	5	22	23	16 36	1.
Total	April, 1959	89	32,291	200	4,977	28,455	6,806	10,812	1,569	632	1,521	849	1,712	3.883	91.
Total	April, 1956	85	21,817	250	3,316	17,820	4,898	8,100	1,109	439	1,115	581	1,250	2,860	63.
Total 4 Mo	othe 1989	346	105,868	834 930	18,135	85,659	22,748	29,398	4,601	2.067	4,773	2.682	5,629	13,122	295.

Based on data from R. L. Polk & Co.

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# **CONTROL!**



BEST FOR RE-RING! BEST FOR RE-BORE! and in trucks...

# OIL CONTROL!

# Sealed Power KromeX piston rings sets with stainless steel oil rings control oil!

New design . . . new material . . . fully tested! These rings come in fast, control oil even under high vacuum conditions or in tapered and out-of-round bores.

#### JUST ONE OF THE REASONS WHY

Notice how open the vents are in this portion of Sealed Power's stainless steel oil ring expander after 50,000 miles of service. This expander does not pit or corrode because stainless steel resists the etching effects of the acids and gases of internal combustion engines.

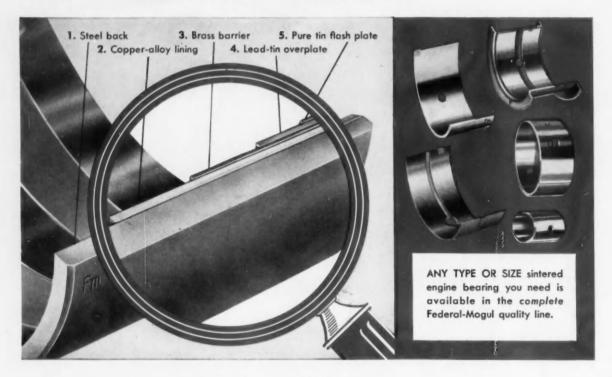
Carbon has nothing to cling to. This eliminates one of the main causes of carbon build-up and oil ring plugging.

SEALED POWER CORPORATION . MUSKEGON, MICHIGAN

Sealed Power KromeX Ring Sets

INSIST ON THE BEST...WHY SETTLE FOR LESS

Better products, faster, from your Federal-Mogul jobber:



# Federal-Mogul builds this bearing in 5 layers so fleets clock more miles between overhauls!



Sintered copper-alloy engine bearings and bushings pay you dividends in longer life, lower maintenance costs!

On its surface, a Federal-Mogul sintered copper-alloy engine bearing looks simple. Underneath, you see this complex marvel of research, design, engineering and production—made by a patented process to deliver a big bonus in fleet mileage.

Five separate layers make up each sintered bearing: 1. Steel back provides strength and bond; 2. Finely powdered alloy of copper for strength, and lead for softness is sintered to make the prime bearing surface; 3. Brass barrier assures lining stability; 4. Lead-tin overplate protects bearings and shaft during break-in; 5. Pure tin flash-plating resists corrosion.

Longer life, less maintenance—that's why fleet owners prefer Fm sintered bearings 2 to 1! Your Federal-Mogul jobber gives fast delivery on the size or undersize you need. Call him today!

# FEDERAL-MOGUL ENGINE BEARINGS

FEDERAL-MOGUL SERVICE

DIVISION OF FEDERAL-MOGUL-BOWER BEARINGS, INC.,

DETROIT 13, MICHIGAN



# For greater visibility on the highways... at all times...in all kinds of weather



# They're based on time-proved principles of Pittsburgh COLOR DYNAMICS®

Ditzler offers a new and exclusive Safety Color Series for trucks and buses, designed to make highway driving safer. This special color service offers a wide range of color combinations that will increase visibility of mobile equipment at all periods of the day and under all weather conditions.

• This series of colors was selected after a comprehensive study of the principles of Pittsburgh Color Dynamics for use on commercial vehicles. Tests of such use of the energy in color were conducted in collaboration with the Johns Hopkins University Institute for Cooperative Research and the Graduate School of the University of Pittsburgh.

Ditzler Color Division · Pittsburgh Plate Glass Company · Detroit 4, Michigan

# DITZLER® INTS - GLASS - CHEMICALS - BRUSHES - PLASTICS - FREE GLASS ITTS BURGH PLATE GLASS - COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

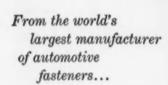
• Included in this painting system are colors that are more readily visible at dusk . . . colors with high reflectance for safer nighttime driving . . . colors that have better visibility in bad weather such as fog, rain, sleet and snow . . . colors that influence and affect judgment of size of vehicles and distance of road surface.

# Send for this important new folder, "Color for Safety Guide"—TODAY!

• Ditzler has prepared a special new folder, Color for Safety Guide, which explains how to apply the principles of Color Dynamics to mobile equipment operating under various driving conditions. We'll be glad to send you a copy. Just mail coupon.

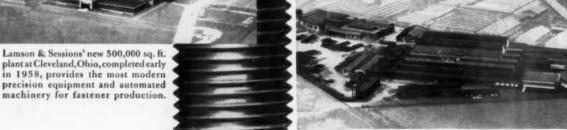


Ditzler Color Division, CCJ-79 Pittsburgh Plate Glass Compa Detroit 4, Michigan	
Gentlemen: Please send your	r new Color for Safety Guide
Name	Title
Company	
Address	
City	State





At Chicago, Illinois, Lamson & Sessions has recently moved into this large, ultra-modern plant, ideally suited to serve the needs of mid-western industries and distributors.



Birmingham's modern plant dedicated to serving the Southern states with the finest products available from stock.

# THREE GOOD REASONS

for concentrating your fastener buying



YOUR PRIME INTERESTS in buying fasteners are dependability and service. With its ultra-modern plants at Cleveland, Chicago and Birmingham, Lamson offers you both top quality and fast delivery, plus excellent packaging.

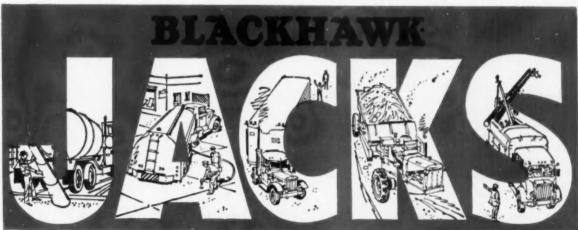
Certainly, price comes into the picture, too. And here, Lamson & Sessions' complete line is important to you. By concentrating your fastener buying to obtain bulk shipping rates, you can cut costs substantially.

Why scatter your fastener buying, or experiment with suppliers? Concentrate your buying with Lamson. Be sure of top quality, uniform dependability and maximum purchasing economy.

## LAMSON & SESSIONS

5000 TIEDEMAN ROAD • CLEVELAND, OHIO

Plants in Cleveland and Kent, Ohio • Chicago and Birmingham



### service the GIANTS



BLACKHAWK HYDRAULIC HAND JACKS —  $1\frac{1}{2}$  through 20 tons; Heavy-Duty Jacks through 100 tons. Preferred for rugged power, top performance.



NEW BLACKHAWK WHEEL DOLLIES — slash tire-wheel job time 80%! One man can easily service all 4 wheels. Three models — Capacity 1500 to 2600 lbs.



NEW BLACKHAWK MOBILE LIFTS — full 5,500 lbs. capacity. Lifts front and rear of all trucks. Two-speed air-lift. Mechanical safety latches. Quickly pays for itself.

### ...baby your service budget!



BLACKHAWK SERVICE JACKS —  $1\frac{1}{2}$ , 2, 4, 10 and 20-tons. Easy-to-spot, sneaks under lowest axles. "Ten-tonner" handles everything that rolls!



NEW BLACKHAWK T-4 TRANSMISSION JACK—one of a complete line of four models, ½ and 1-ton capacities. T-4 and one man easily handle all makes of truck transmissions!



NEW BLACKHAWK MOBILE CRANES — lift engines, tires, barrels, all bulky equipment,  $\frac{1}{2}$ , 1 and 2 ton capacities. Also mounted on trucks and docks.

More good news for fleets from the long red line—for bus and truck operators who want more profitable road time, less non-productive time in the shop. Blackhawk offers rugged, brute strength and top-efficiency in *new* fleet service equipment that boosts service efficiency, slashes manhours, speeds routine

inspections of every vehicle you operate.

Make your next jack a Blackhawk! the only complete fleet service equipment line — your one source for the right jack for every job.

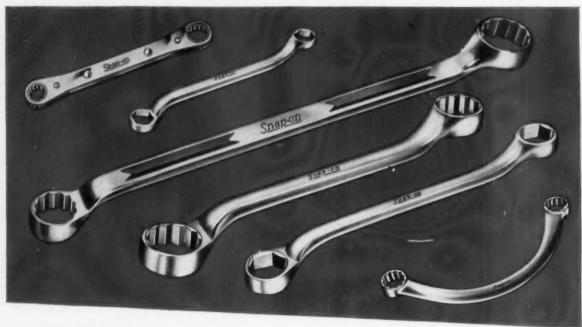
Your Blackhawk jobber is waiting for your call. Phone him right now!



WORLD'S LARGEST MANUFACTURER OF MECHANICAL, AIR AND HYDRAULIC-POWERED SERVICE EQUIPMENT

### BLACKHAWK

BLACKHAWK MFG. CO., Dept. J-1179, Milwaukee 46, Wisconsin



### Top-flight mechanics choose matched sets

of Snap-on Boxockets... Why?

Because every Boxocket in a Snap-on set has the same matched balance, the same good "feel." the same solid strength and sure fit.

Working with these matched tools day-in, dayout, a man gets to feel they're part of him. They give him a "touch" and working confidence ordinary tools can't match. A mechanic can wrap his mitts around a Boxocket and pour on all the power he's got.

Balance, feel, fit, confidence - put 'em all together and they mean just one thing - extra work speed that puts extra bucks in the pocket.

Snap-on Boxockets actually cost less in the long run, too. They'll be rasslin' the tight ones long after the bargain tools hit the scrap heap.

Your Snap-on man can give you a lot of reasons why owning Snap-on Boxockets makes good sense - like their snug, sure fit to prevent slippage and injury - extra safety of the full box head - strong, yet thin side walls that let you get into the tight spots-chamfered edge to get a working grip on the nut quicker-and many others.

Get a matched set of money-making Boxockets the next time you see a Snap-on man.



1 0 T Kenosha, Wisconsin





8026-G 28th Avenue

XS-606S-K DWARF BOX-OCKET SET. Six singlebroached Boxockets, 7 sizes from 1/4" to 5/6" in sturdy vinyl kit bag.



RB-606-K RATCHETING **BOXOCKET SET.** Six ratcheting Boxockets, 10 sizes from  $\frac{1}{4}$ " to  $\frac{1}{6}$ " in vinyl kit bag.



XS-607-K DWARF BOX-OCKET SET. Seven double-broached Boxockets, 9 sizes from \( \frac{1}{16} \)" in vinyl kit



XV-611-K LONG-HANDLE BOXOCKET SET. Eleven double-broached Boxockets, 16 sizes from  $\frac{3}{8}$ " to  $1\frac{1}{4}$ " in strong vinyl kit bag.



### 4 Steps to Safety"

New Mobil Color Film Shows You How Modern PM and Safety Methods Can Help Increase Your Profits!

This entertaining and informative film covers a number of important steps you can take to help improve fleet performance, raise fleet profits. It was produced with the technical cooperation of American Trucking Associations, Inc., to assist Interstate Commerce Commission in promoting highway safety.

Here are just a few of the film's highlights:

- \* How to keep your fleet in top road condition at all times with minimum paperwork.
- \* Safety measures you can adopt to help cut down accident rates.
- \* Timely tips to help eliminate breakdowns that cause excessive shop time and frequent replacement of costly parts.
- \* An effective, practical way of simplifying your Preventive Maintenance.

Your Socony Mobil representative will be glad to show you this great new film at your convenience. Just fill in and mail this coupon:

Advertising Dept., Socony Mobil Oil Co., Inc. 150 East 42nd St., New York 17, N. Y.

> Yes, I'd like to see the new PM and Safety film, "4 Steps to Safety."

NAME

ADDRESS

COMPANY



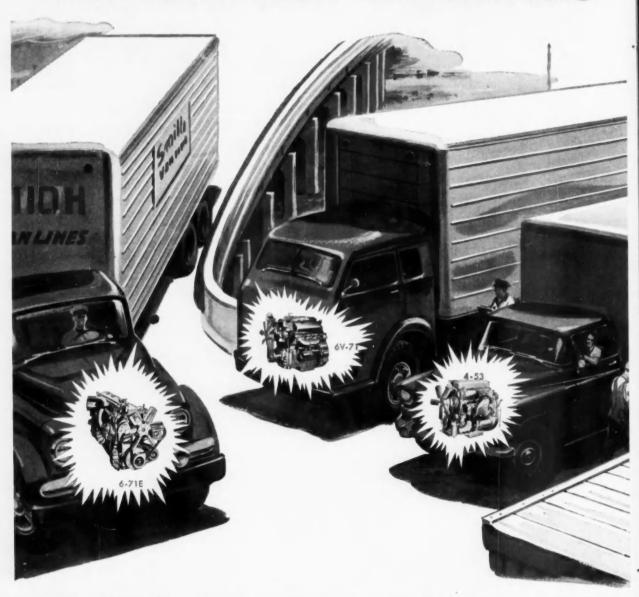
Correct Lubrication you're Miles Ahead with Mobil

Another reason with Mobil

Tune in "TRACKDOWN" every week, CBS-TV. See your local paper for time and station.

Now there's "Jimmy" Diesel power for everything on wheels!

## GM DIESEL ENGINES







"2-53" "2-71" to 47 H.P. 33 to 67 H



"3-53" 38 to 97 H,P.



"3.71" 51 to 118 H.P.



"4-53" 51 to 130 H.P.



"4-71" 69 to 167 H.P.



"6V-53"



"6-71"

# IN ALL YOUR TRUCKS

...mean money in your pocket!



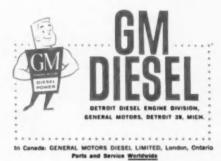
The top fleet performance of GM Diesel highway hauling power is no secret. In fact, the new "71E" "Jimmy" Diesel engines are making new records the country over.

And now you can cash in on "Jimmy" Diesel efficiency and economy to a never-before degree—by standardizing on GM Diesel power in every piece of rolling stock you own.

It will mean unheard-of fuel mileage in your peddle-andshuttle jobs—increased performance and economy from your line rigs. Even your terminal fork-lifts will do more at lower cost and with minimum maintenance.

You'll save still more on parts. Just imagine servicing all your equipment with one small stock of interchangeable parts! Mechanic training will be far simpler. You won't even need as many shop tools.

Isn't it easy to see, then, what a tremendous money saver GM Diesel standardization can be? And all the economies—not to mention all the other advantages—are yours for the asking. Just ask your dealer to furnish "Jimmy" Diesel engine powered equipment—and for information on repowering your present rigs, contact your nearest GM Diesel distributor.





# Laugh it off

Freight Claim Agent: "Have you lost an inmate, recently."

Asylum Superintendent: "No, why?"

Freight Claim Agent: "Someone's eloped with my wife!"

ccr

The patriarch of a famed trucking family was recovering from an operation. As he lay in his hospital bed, two of his grandchildren came in to see him. The old fellow looked up and said, "Same old family. You didn't remember my birthday."

His kinsmen, somewhat ashamed, said, "We would have brought you something, Grandfather, but we forgot."

"Yeah, I know," said Grandpa. "I forgot to marry your grandmother, too!"

Horribly shocked, the two said in unison, "You mean that we're . . . ?"

"Yep," said Grandpa, "and a bunch of damned cheap ones, too!"

001

RATE CLERK: "I TOOK HER TO A SHOW, BOUGHT HER DINNER, AND THEN WENT TO A NIGHT CLUB. THEN YOU KNOW WHAT SHE SAID?"

OS&D CLERK: "No."

RATE CLERK: "OH, THEN YOU'VE DATED HER, TOO, HUH?"

001

Sweet Young Thing: "No, I've never met you. You haven't seen me in the movies or on the stage. I didn't go to school with you. I know I'm good looking and I'm not bashful. I'm positively not going your way and I wouldn't ride with you on a bet. Furthermore, I'm engaged to a Marine sergeant who weighs 220 pounds. Now, were you going to say something?"

Tanker Truck Driver: "Yes, dammit. You're losing your underwear." 1st Truck Driver: "While they're unloading us, let's eat."

2nd Truck Driver: "Where are we going to eat?"

1st Truck Driver: "Let's eat up the street."

2nd Truck Driver: "Naw, I hate asphalt."

STENO JO: "DID YOU EVER SEE A LIE

STENO FLO: "DID I EVER SEE ONE?"
HUH, I MARRIED ONE!"

0.0

Reefer Driver: "I just heard of a girl who takes a shower and dresses in five minutes."

Diner Waitress: "Aw, now, c'mon. That isn't so wonderful."

Reefer Driver: "I'd like to see you do it."

"Cici Jay" \_



"Thank goodness Joe parked the service truck nearby!"

FREIGHT TRUCKER'S WIFE: "I'M TERRIBLY WORRIED, MY HUSBAND THINKS HE IS A HORSE."

PSYCHIATRIST: "I BELIEVE I CAN CURE HIM, BUT IT WILL TAKE QUITE A LOT OF MONEY."

FREIGHT TRUCKER'S WIFE: "OH, MONEY IS NO OBJECT, DOCTOR. HE JUST WON THE BELLMONT STAKES."

CCI

Texas Truck Operator: "Good, mornin'. It's a big, bright, wonderful day, ain't it?"

Automobile Dealer: "Yes, sir. Can I help you?"

Texas Truck Operator: "I hope so. My wife's come down with the sniffles and I'm lookin' for some sort of get-well car."

CCJ

Reefer Driver: "Hey, Myrtle, there's a fly in my soup!"

Diner Waitress: "Well, what do you want me to do, Mac, put a zipper on it?"

CCJ

SAFETY SADIE'S ADVICE TO GIRLS: "IF PEOPLE CRITICIZE YOUR BATHING SUIT, DON'T TRY TO LAUGH IT OFF—YOU MIGHT."

Steno May: "You know, I'm five feet six inches stripped."

Steno Fay: "Silly goose. You don't have to strip to have your height read."

Steno May: "That's just what I told the doctor."

CCJ

Traffic Rate Clerk: "I'd like to have this dance if you'd give me the plea-

Buxom Brunette: "Why, certainly. Come on out on the back porch."

Resume Work



Batteries work—hard. They seldom rest. To start a motor they use up a tremendous amount of energy—over long hauls the battery charges—sometimes too rapidly. When stopped, the battery discharges.

For long satisfactory service and life, the amount of charge and discharge can be controlled to suit each type of driving . . .

depending on stops, starts, long hauls and so on.

We have helped many fleet owners cut their battery costs with the Gould-National Fleet Battery Maintenance Plan. We'll be glad to help you.

There is no charge for this service. Use the coupon below or write Fleet Dept., Gould-National Batteries, Inc., St. Paul 1, Minn.

NAL NC.	We are interested in your Fleet Battery Maintenance Plan. Have your service engineer call us for an appointment.
Gould-National	CO. NAME
BATTERIES, INC.	MY NAME
BATT Par	STREET
5 5	CITYSTATE

TIRED CABLE COULD CAUSE AN UNSCHEDULED STOP...

### REPLACE WITH LONG-LIFE PACKARD CABLE NOW

Don't wait for tired cable to give up. Replacement then would cost a great deal more than playing safe now. Many fleet maintenance departments have standing orders to install new Packard Cable at the first sign of age or wear in existing wiring.

Why Packard Cable? Because it's specially insulated to deliver more miles of service at less cost per mile—no matter how tough the going.

Packard is the complete original equipment line.

with a cable for every automotive need—many of them Packard exclusives. More cars, trucks and buses are delivered with Packard Cable than all other makes combined. And the majority of maintenance award winners in the transportation industry use it. too.

Packaged and labeled for accurate, easy replacement, Packard Cable is available everywhere through the United Motors System.

### There's a Packard Cable for every fleet need



This exclusive Packard ignition cable suppresses radio and TV interference. It is original equipment on millions of vehicles.

T.V.R.S. CABLE

Long the leader, this Packard-developed high-tension cable is used on more vehicles than any other, except for Packard T.V.R.S.



"440" IGNITION CABLE



Specially engineered by Packard to deliver full starting power, resist acids and corrosion, and make replacement easier.

BATTERY CABLE

Designed for exposed conditions, with extraheavy tough plastic insulation that stands up to weather, wear and knocks.



SUPER DUTY CABLE



STEAM CLEANING CAN'T HARM PACKARD ENGINE COMPARTMENT CABLE

This compact, highly flexible low-tension cable is designed by Packard engineers to stand up under the toughest conditions. It's triple-insulated with a tough synthetic compound, close-knit glass braid and an outer jacket of a special Packard plastic compound.

It withstands high temperatures, diesel fuel and oil vapors—even the chemicals used in steam cleaning! Engine Compartment Cable is a newer member of the complete Packard Cable line, and just one more reason why Packard is first choice for both original equipment and replacement.





### HOW STAINLESS STEEL TANK TRAILERS Provide Transporter Maximum Versatility

Refiners Transport & Terminal Corporation hauls products ranging from vodka to formaldehyde, ammonia, phthalic anhydride and paints in stainless steel units.

Here is another example of the wide range of liquid products that can be hauled in stainless steel tankers. It illustrates how stainless gives trucking fleets money-making versatility.

According to C. C. Bingaman, operations manager for Refiners Transport, stainless is specified for greatest versatility. Tank and outer jacket of their insulated tankers are stainless, as well as dome covers, external lines and valves. Trucks resist corrosive attack by a wide variety of chemicals. The smooth, hard surface of stainless steel simplifies thorough, contaminant-free cleaning so necessary

in switching from chemicals like formaldehyde and ammonia to vodka and food products,

#### EXTRA PROFIT IN STAINLESS

Tank trucks made of Armco Stainless Steel can help your fleet earn extra profit because you can safely haul a greater variety of products, get more return loads, reduce costly off-the-road time, and cut maintenance and cleaning costs. For more information on Armco Stainless Steel and its use in tankers, write Armco Steel Corporation, 2209 Curtis Street, Middletown, Ohio.

### **ARMCO STEEL**



Armco Division • Sheffield Division • The National Supply Company • Armco Drainage & Metal Products, Inc. • The Armco International Corporation • Union Wire Rope Corporation • Southwest Steel Products

Go Stainless for a Versatile Fleet

# Dayton Thorobred Thorobred

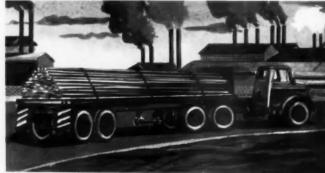
increase monthly payled 696 top miles per unit

# Think law Dayton

built LIGHTER, COOLER-RUNNING, STRONGER to increase your profits, reduce your operating costs!

Here's news to brighten your profit picture! News about Dayton's super-strong Highway Extra Mileage 5-Rib... the heavy-duty truck tire that lasts longer yet weighs far less... giving you tons of extra monthly payload potential while reducing normal operating costs.

It's a trim, muscular tire with a super tough tread ... is far stronger than any of the 4 other leading first-line tires ... reduces dead weight by 11.9 pounds. What's it all worth to you? Read the amazing facts, check the chart and figure how much extra profit your fleet will earn in just one year.



#### LIGHTER

The lighter yet stronger construction of Dayton Highway Extra Mileage 5-Rib Tires allows you up to 214 lbs. more payload\* per vehicle per trip—thanks to Dayton's Electronically-Processed Super Super Cordura construction.

\*Based on 5-axle combination.

### BUILT-IN SAVINGS FOR YOU!

- FIVE MASSIVE RIBS put more loadsupporting rubber on the road . . . assuring slower, more even tread wear.
- NEW TREAD DESIGN restricts tread movement under load . . . for added freedom from lateral slipping.
- EXTRA DEEP "THERMASCAPE" shoulder elements vent internal heat for cooler running and greater protection from heat failure.
- e LARGER FLEX AREA plus newly designed fillets minimize wood cracking and stone impoint.
- o FAR STRONGER than the average of 4 other leading tires, Dayton Super Super Cordura construction gives recap after recap... adds miles of low-cost operation.



### Thorobreds

#### COOLER RUNNING

Up to 11.9 lbs. lighter, Dayton Highway Extra Mileage 5-Rib Tires are free from the heat-producing bulk that shortens tire life. Heat is released more rapidly and the carcass runs cooler, so Dayton Thorobreds last longer... take more recaps for lower cost per mile.



### STRONGER

Miracle-strength Super Super Cordura ... further strengthened by Dayton's exclusive electronic processing ... permits the building of a lighter 8-ply tire that's far stronger than the average of four other leading first-line 10-ply (12-ply rated) tires of comparable size.

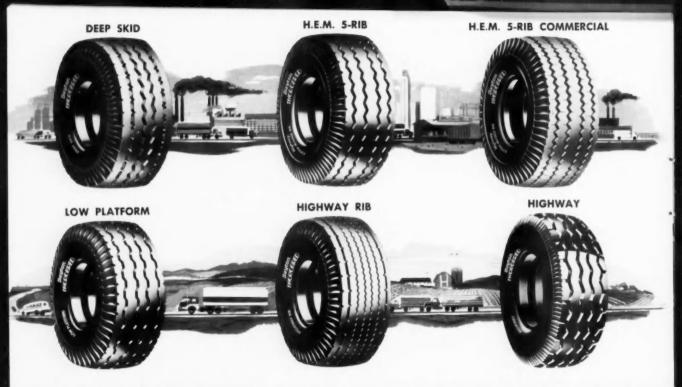
### HERE'S HOW TO FIGURE YOUR OWN POTENTIAL EXTRA PAYLOAD PROFIT!

Following the ex-
ample, fill in the
columns on the right
with your own
hate your extra annual earnings with

	No.	
Avg. Tube-type Wt. (Rayon)		9.5 lbs.
Dayton Tube-type Wt. (Super Super Cordura)	- 117	7.6 lbs.
Savings per tire	1	1.9 lbs.
Tires on tandem tractor-trailer	× 18	В
Weight saved per unit	214	4.2 lbs.
Avg. unit mileage per month	× 65	00 mi.*
1,392,300 lb. miles, or		
Monthly payload increase per unit	696 to	n miles
Avg. revenue per ton mile	. ×\$	.057*
Extra monthly profit per unit	. \$	39.67
No. units in fleet	. ×	25
Extra monthly fleet profit	. \$	991.75
Months in year	. ×	12
Extra annual fleet profit	\$11,	901.00

Based on research figures of a loading trucking magazine





ON THE ROAD

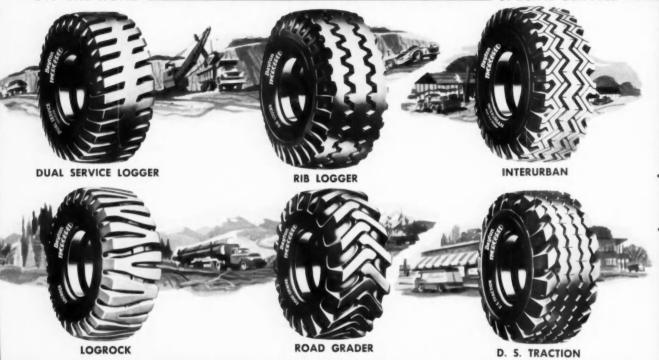
### Dayton Thorobred Tires

Whatever your needs, there's a money-saving Dayton Thorobred truck and trailer tire to lower your operating costs. Ask your Dayton Distributor or factory representative why Thorobreds give you extra profitable original miles and recap after recap. Be sure to specify them on all new equipment orders.

THE DAYTON RUBBER COMPANY . TIRE DIVISION . DAYTON 1, OHIO



#### SPECIAL SERVICE





### Jenny saves \$13,000 a year for Continental Transportation Lines!

Hear what Mr. Fred W. Ogden, Maintenance Superintendent of Continental Transportation Lines, says: "We couldn't operate efficiently without Hypressure Jenny. It does a top-flight job in our establishment."

Mr. Ogden services and maintains 500 trucks, using a Hypressure Jenny for cleaning before major overhauls, cleaning parts, removing road mud from undercarriages and as a preliminary to repainting. On these routine maintenance jobs, Jenny saves him 100 man-hours of labor a week, or approximately \$13,000 a year in maintenance expense! Get the full story of Jenny savings—mail coupon today!



HOMESTEAD VALVE MANUFACTURING COMPANY Hypressure Jenny Division, P. O. Box 90, Coraopolis, Pa.





MOTOROLA 2-WAY RADIO GIVES YOU COMPLETE CONTROL over every vehicle's movements, every minute of the day. At the press of a button, you are in command of your vehicles—sending them directly to the next job; rerouting them for a pickup to eliminate costly back tracking and "dead heading." You're saving manhours, miles and money every time you use the radio . . . building customer satisfaction on every call. You've got competition on the run—because your costs are lower—your service better. ■ Savings quickly pay for the entire radio system . . . and then return a handsome profit. With Motorola, you have the most reliable, most economical radio available. And with nearby factory-authorized service, you are assured of continuing peak performance. No wonder Motorola 2-way radio outsells all others combined! Write today.

Motorola . . . the communications specialists for industry



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## TRACTION

PLUS . . . 30 TON CAPACITY
MAKES THE POWERFUL W-2800

### OSHKOSH

YOUR BEST INVESTMENT FOR CUTTING HAULING COSTS!





Ask for your copy of the new W-2800 literature.

The Model W-2800, with 30-ton payload capacity, is the biggest, strongest, most powerful heavy duty truck ever manufactured by Oshkosh. With all-wheel drive, the W-2800 is engineered for ½3-¾ weight distribution for equal tire loading which increases tire life at least 25%, reduces haul road maintenance costs, provides traction for any and all operating conditions, assures excellent maneuverability.

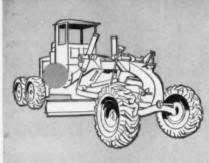
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OSHKOSH MOTOR TRUCK INC.

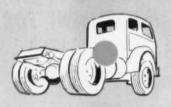
Oshkosh

Wisconsin

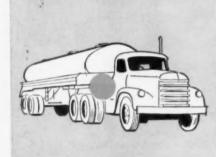
4 WHEEL DRIVE G TRUCKS



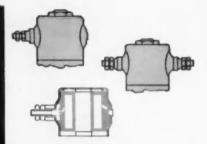
Automatic diesel governor contrel. To improve brake life and save fuel this motor grader uses a Skinner V5, three-way, normally open solenoid valve to relieve pressure in the hydraulic actuated engine governor. When the brakes are applied, the valve is energized by a pressure switch on the master cylinder causing the valve to close and bypass oil from the governor cylinder which reduces the pressure and throttles the engine.



Saddle tank operation. Energized by a standard dash-mounted toggle switch, a Skinner valve makes fuel level readings and tank switching a one-step, push-button operation. Valve reduces accident hazard by preventing driver's attention from being diverted; saves on labor and materials by eliminating fuel piping.



Propane and butane fuel cut-eff. On trucks using liquid propane or butane fuel, Skinner V61 solenoid valves are used as a safety device to automatically shut off the tanks from the fuel system when the vehicle is not in operation. The valve is installed on the line ahead of the vaporizing unit and is energized by the ignition switch. Skinner valves for this application are approved by the Underwriters' Laboratories.



Skinner solenoid valves are available with single or double automotive terminals; specially designed automotive housings with potted coils (coil, housing leads and flux plate are potted with a compound to make them vibration-proof and moisture resistant); and waterproof molded coils that operate in all types of weather, under the severest conditions—even under water.



Additional features of Skinner automotive valves include: stainless steel internal parts; soft synthetic, long-lasting inserts that provide bubbletight sealing; spring-loaded plungers; mounting in any position; orifice seats with radius with well-rounded contact area and high finish for long insert life. All valves are built to the highest UL standards for the convenience and safety of the automotive industry.

### Skinner solenoid valves help solve automotive problems like these

SKINNER SOLENOID VALVES ARE DISTRIBUTED NATIONALLY. For complete information, contact a Skinner Representative listed in the Yellow Pages or write us at Dept. 547



### New!

### ...by DELCO



SPECIAL **19**WINDSHIELD WASHER
SOLVENT

FOR ALL WASHERS...FOR NORMAL DRIVING CONDITIONS

- Added to water—creates non-foaming solution.
- Solution won't stain car finishes.
- Leaves windshield clear—no spotting.
- Helps dissolve and remove hazardous road film, bugs and grime.
- Conveniently packaged in non-rolling flat 6 oz. cans.

ORDER BOTH OF THESE
FAST-SELLING DELCO
WINDSHIELD WASHER PRODUCTS
FROM YOUR UNITED MOTORS
DISTRIBUTOR TODAY!





### NEW DELCO SPECIAL 15 WINDSHIELD WASHER ANTI-FREEZE

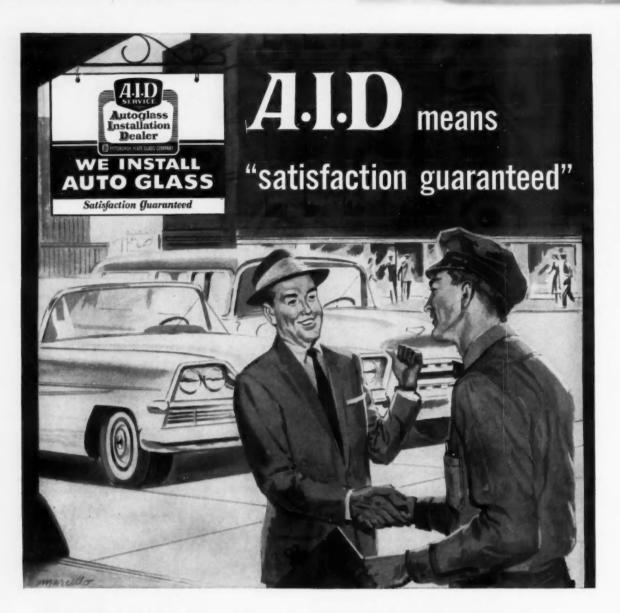
This new washer additive now makes possible the operation of windshield washers in extreme winter driving conditions, operating as low as 0°F. Now, you can do a complete car winterizing including windshield washers. It is not harmful to car finishes and leaves windshield clear—no spotting or smearing.



#### DELCO APPLIANCE DIVISION

GENERAL MOTORS CORPORATION Rochester 1, New York

ELECTRIC WINDSHIELD WIPERS AND WASHERS . WINDOW LIFTS
ANTENNA LIFT MOTORS . SEAT ACTUATORS . HEATER, AIR CONDITION
& DEFROSTER MOTORS . VENT WINDOW ACTUATORS . TRUNK CLOSURES



We know first-rate auto glass service is important to you. That's why we recommend the shop that displays the A.I.D. sign.

A.I.D. stands for Autoglass Installation Dealer, who stands for guaranteed quality workmanship at all times. His skilled and speedy service in installing Pittsburgh Plate Safety Glass in your cars and trucks is prompted by a strong sense of personal responsibility to you, the customer.

For unexcelled PPG Safety Glass, installed with care, go to your nearest A.I.D. You can find his name in the Yellow Pages of the phone book, or see him at the shop bearing the green and white A.I.D. emblem.

ALL PPG AUTOMOTIVE SAFETY GLASS COMPLIES WITH EVERY RECOGNIZED SAFETY CODE

Watch the GARRY MOORE SHOW Tuesday nights



PAINTS . GLASS . CHEMICALS . BRUSHES . PLASTICS . FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED



### NEWS for Fleet Operators

HOLLEY CARBURETOR COMPANY

WARREN . MICHIGAN



Model 2140-G

### **Watch Those Throttle Plates** During **Carburetor Repair**

Too often, during carburetor service, short cut methods of handling the disassembling and assembling of throttle plates result in an excessive idle air flow or sticking plates. Proper throttle plate installation will pay off in finer carburetor per-formance. In the case of the Holley Models 2140-G, 2140-SG and 4000-G, correct throttle plate installation can be performed quickly and easily by following the steps below.

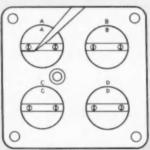
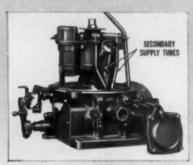


Figure 1

Figure 1-Proper handling begins during disassembling. Since throttle



Model 2140-SG

plates tend to wear to fit the throttle bore, it is important that a number or letter be scribed on the outside of each throttle plate and a cor-responding figure on the outside of the throttle body. In addition, a light line scribed along the side of the throttle shaft will speed alignment during reassembly.

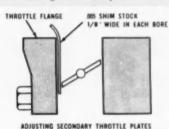
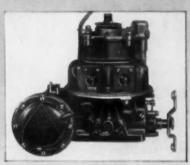


Figure 2

Figure 2-During assembly, before tightening the screws, install a piece of .005 shim stock, one-eighth inch wide in the outside of each secondary bore. Tap throttle plates gently to align and then tighten screws. The installation of the shim stock provides the ideal clearance to compensate for the air pressure exerted on the offset plates during operation; particularly at idle or deceleration.

Installation of the throttle plates by any other method may result in excessive idle air flow or sticking plates. During overhaul, the primary and secondary shafts should be checked for excessive wear. Maximum tolerance for looseness or total movement is .007 on the primary side and .0055 on the secondary



Model 4000-G

side. If there is any question regarding the shaft clearance, an accurate check can be made by mounting a dial gage to indicate the movement of the shaft at the outboard side of the throttle bore.

Secondary Jet Tube Seal Replacement

On Holley Carburetor Models 2140-SG and 4000-G, the tubes that supply fuel to the secondary nozzles are sealed by synthetic "O" rings at both ends. These rings are much like the "O" rings used in sealing

high pressure hydraulic systems. For all around top performance of the carburetor, these rings should be replaced during overhaul. They are held in place by a flat metal washer that is staked in place and which also must be replaced. You can do this with the Kent-Moore 10-195 Staking Tool Set, which includes cutters to remove the metal from the old stake, as well as a staking tool to restake the "O" ring retaining washer. These tool sets are available through all Holley Distributors.



Staking Tool Set

HOLLEY CARBURETOR CO. 11955 E. Nine Mile Road · Warren, Michigan FOR MORE THAN HALF-A-CENTURY-ORIGINAL EQUIPMENT MANUFACTURERS FOR THE AUTOMOTIVE INDUSTRY



Dale Hickerson, Walter Arnold (mechanic), Al Hancock and Don Bronson, regular drivers and crew of the Autocar—Hall-Scott Million-Miler.

### ON \$544 OF REPLACEMENT PARTS

Million-mile service from a truck engine without major overhaul is unusual in itself. But when the cost of replacement parts for that mileage is only \$544, such service is a real tribute to the engine and the men who operate and maintain it.

No wonder Petrolane Gas Service, Inc. of Long Beach, California held a special dinner to honor the three drivers and mechanic who operated the Autocar truck and its Hall-Scott LPG power plant for 1,000,000 miles without a chargeable accident. In addition to its over-the-road mileage,

a third of which was on mountainous terrain, the truck's engine put in 3,564 hours on unloading pump drive for LPG cargo.

Many other Hall-Scott engines have passed the million-mile mark . . . and there will be many more. In fact, a unique Million-Mile Club has been formed of operators owning these long-serving power plants: note the certificate at left.

If you'd like to know more about these moneysaving engines, write Hercules or any of its distributors coast-to-coast.



#### HERCULES ENGINES

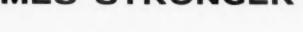
... Sold and Serviced the World Over



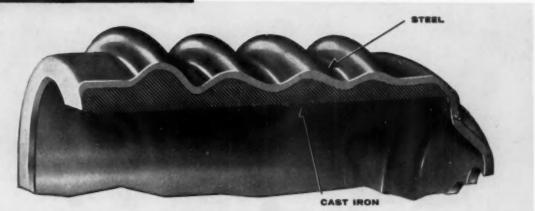
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Canton, Ohio



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Centrifuse brake drums are up to 25% lighter because high grade steel replaces conventional cast iron on the drum shell - yet they are five times stronger! Centrifuse drums give you more operating economy and greater payloads.

Centrifuse brake drums are not cast — they combine the advantages of cast iron and steel by fusing molten iron to a tough outer steel stamping by centrifugal force. Motor Wheel's exclusive Centrifuse process provides a drum that's better in every way . . . lighter, stronger, safer, cooler and better balanced.

Over 100 million Centrifuse brake drums have been in service without a single break or explosion — no need to install steel bands to protect against premature cracks. Specify "Centrifuse" drums for your rolling equipment.









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MOTOR WHEEL CORPORATION Lansing, Michigan

SERVING THE AUTOMOTIVE INDUSTRY SINCE 1906



# EXCLUSIVE DRIVMATIC RIVETING CUTS and you can "tailor your trailer" to fit-

Here are six all-new trailers engineered specifically to take advantage of the advanced manufacturing technique used only in the aircraft industry until Dorsey adapted it to build trailers last year! Because superior riveting makes it possible to design weight out of trailers and at the same time make them stronger, each of these new Dorseys sets a new standard of payload capacity in its class. It's as simple as this: the strength of a Monocoque structure depends upon the way the side sheets are attached to stiffeners - and Drivmatic-riveted joints are 40% stronger than manual riveting.

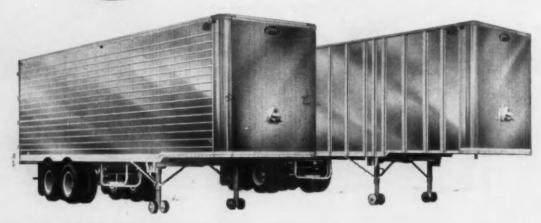
And because Dorsey's electronically-controlled riveting machine installs 6,000 of the rivets in a trailer in less than an hour's time, a substantial saving in cost of manufacture can be passed on to the buyer.

To fully appreciate what this revolutionary development can mean to you in dollars and cents, make a careful inspection of these new models. See your Dorsey Distributor today.

Weights and cubage quoted are for fully-standard 35-foot trailers on 10:00 x 20 tires.



### Bigger, Lighter HI-CUBE VANS



#### Satellite (HALT)

2,247 Cubic ft. Weight: 9,900 lbs.

A nose assembly that just won't break down heads a list of special engineering features that make both Dorsey Hi-Cubes outstanding for strength as well as capacity. The Satellite has plywood lining ingeniously recessed in the side-posts affording 93" inside width.

#### Vanquard (HEPT)

2,260 Cubic ft. Weight: 9,450 lbs.

Fully - stressed aluminum side sheets provide smooth interior walls and 931/2" inside width in the rugged Vanguard. Exterior post construction permits minor accident repairs to be made in almost any shop with minimum downtime. Half or full plywood lining and aluminum scuff plates available at moderate cost.

### **DORSEY TRAILERS / ELBA, ALABAMA**

Whatever your requirements, you'll find the right answer in Dorsey's complete line



SATELLITE and CHAMPION Trails



VANGUARD



GIANT



FURNITURE



### WEIGHT AND COST IN NEW DORSEYS

your requirements with no price penalty!

Economical "custom design" has long been standard practice with Dorsey, which means you may specify a wide variety of materials, dimensions, floor sill or side post spacing, etc., without paying for special engineering or delaying delivery. Our Research and Development engineers anticipate most options a customer could ask for at the time new models are designed and the parts are manufactured and wasehoused along with standard components. Thus substituting interchangeable parts on the assembly line involves little or no additional labor cost. For example, substituting steel for aluminum, or vice versa, will vary the weight and price of a trailer in direct proportion to the weight and cost of the materials only, with no added penalty. The same economy applies to many other features including linings, insulations, floors and doors.

Your Dorsey Distributor and his staff are trained in Elba to assist you with the best trailer specifications to suit your transportation needs. Ask him to show you!

### Stronger, Lighter GRAIN TRAILERS



Satellite (GALT) 8,495 lbs.

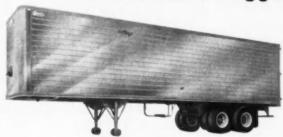
New design eliminates an old headache in grain trailer operation in both these new Dorseys: Front corners are stress-relieved to prevent breakage under wracking or twisting. Precision machine riveting will keep the ribbed aluminum Model GALT sleek and beautiful.



Vanguard (GEPT) 8,190 lbs.

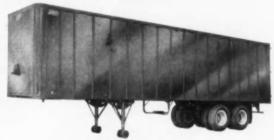
Top and bottom rails are special new extrusions designed for extra strength. Top rail contains leak-proof sockets for tarpaulin bows. On the outside-post GEPT clad aluminum sheets provide smooth inside walls. Both models have the new Dorsey full-width upper fifth wheel plate.

### **Economical, Rugged ALL-STEEL VANS**



Atlas (DIPT) 10,130 lbs.

The economy and durability of steel in a trailer lighter than most aluminum vans? It HAS been done — an achievement of progressive engineering and the amazing perfection of Drivmatic riveting.

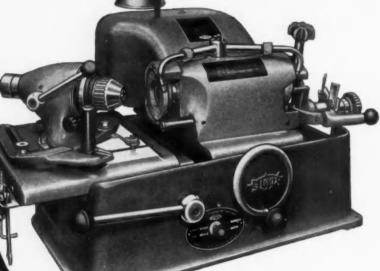


Titan (DOPT) 10,130 lbs.

Both steel vans have the new Dorsey pickup plate that spans the entire width of the trailer, the patented Servidor (electrical connection box) and many other important new features.



DORSEY TRAILERS	
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RUSH literature on	
High-cube VansGrain TrailersSteel Trailers	
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CITY and STATE	



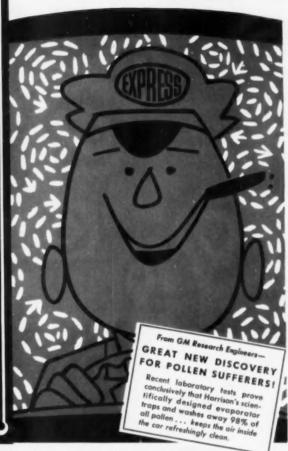
Men who buy valve face grinding machines have made SIOUX the top banana. More SIOUX VFGM's are in use today than all others combined!

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ALBERTSON & CO., INC. SIOUX CITY, IOWA, U. S. A.

HE'S HOT! HE'S NOT!





### KEEP YOUR FLEET NEAT WITH GENERAL MOTORS AIR CONDITIONING!

Sweltering Sam, on the left, is in a lather over his job. Heat's got him down, and he's too wilted to work. He drives in a fleet that's not air conditioned.

Ready Freddie, on the right, is rarin' to go. He's selling instead of sizzling, and he makes his company look good. This fleet is air conditioned by Harrison, the modern sensible way to keep salesmen and drivers neat and cool during summer's soaring temperatures.

Smart fleet owners are reaping the rewards of Harrison Air Conditioning . . . better morale, company prestige, more sales. Harrison's Custom "under-the-hood" system is designed for all 1959 General Motors cars. The thrifty Cool-Pack system fits compactly under-the-dash of the new Chevrolets and Pontiacs and most Chevrolet trucks. Ask your GM dealer about Harrison Air Conditioning—a quality General Motors product.



AVAILABLE AT YOUR GENERAL MOTORS DEALER

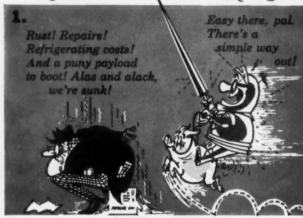


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# A case of cold feet with Sir Payload Pete (the modern Aluminum Knight)



Great gattoping gas bills! Our ph pooping out!



Switch to aluminum, man. Lightweight aluminum bodies! You'll boost payload plenty because aluminum bodies weigh up to 50% less than steel for the same job! And you'll reap a pile EH? of pig's foot profits

with fewer trucks!





10 years' service—and still going strong! Back in 1948, the Hammon Baking Co. of Jefferson City, Missouri, purchased a 4400-lb. delivery truck equipped with an aluminum body from J. B. E. Olson Corp. Compared with an equivalent 6350-lb. wood and steel unit added 6 months later (and now retired), the body made with Kaiser Aluminum has been operating at almost a full cent and one-half less per mile. And it still has many more years of economical service ahead. Small wonder Hammon has now completely converted to aluminum!



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### AASHO Road Test Shifts into High Gear

It's gathering facts to help decide . . .
the level of highway taxes you'll pay,
what size vehices will pay how much,
what kind of highways will be built,
future size and weight limits

THEY'RE IN HIGH GEAR at the AASHO Road Test. Data by the bushel is pouring out on how various types of highway construction stand-up under several different axle loadings.

You have a vital interest in what's going on. Results will affect your future fleet operation in respect to . . .

- The level of highway-use taxes you'll pay.
- The division of these taxes between various weight classes of vehicles.
  - The kind of highway you'll be using.

Data on road wear comes from many sources. First, some 7000 measuring devices have been bolted, imbedded, cemented and otherwise connected to the many test slabs

Benkelman beam is one of many mobile test instruments used to gather information. It measures pavement deflections under trucks going over slabs at creep speed





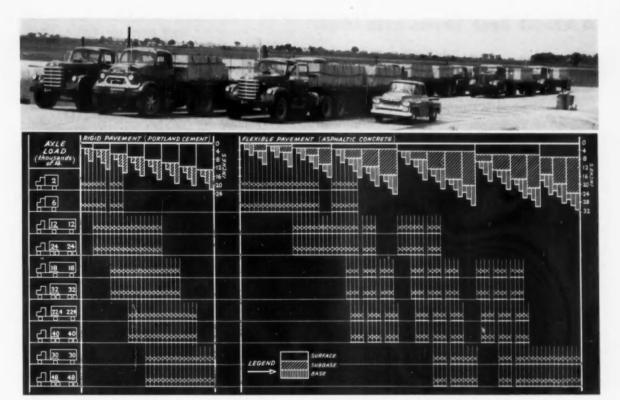


Chart shows construction of test highway sections and what axle loads are being run over them. Vertical column at left shows the vehicle type and axle load. First section to the right of this shows different constructions of rigid pavement (Portland cement) highway being tested. Next section shows the same for flexible

pavement (asphaltic concrete) highway. An "x" in the chart shows what sections are getting what axle load. In the chart, the base and subbase on flexible pavement sections have been transposed for convenience in showing varying test thicknesses. In actual construction, the subbase would be at the bottom under the base layer

• The sizes and weights you'll be permitted.

In other words, both your revenue and your expenses are involved as the trucks loop-the-loop on the test highway near Ottawa, Ill.

Because of this impact on future fleet operation, COMMERCIAL CAR JOURNAL sent a man there early last month for a first hand view of what's going on. Here's what he found out. . . .

The difference between the present test and previous road tests has been likened to the difference between a Model T and a 1959 car. The AASHO test,

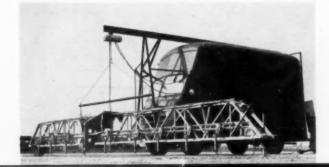
using the principles and experience of earlier tests, is set up to do a much more effective and complete job.

For example, the Maryland Road Test, widely publicized only a few years ago, was conducted on an ordinary strip of pavement built some 10 years before. Absolute knowledge of its base, subbase, subsoil, and the amount of wear it had already sustained was almost impossible to obtain. At best, it offered data only with regard to that type of pavement.

(TURN TO NEXT PAGE, PLEASE)

Transverse profilometer is used to measure road wear across face of highway at right angles to traffic flow, especially depth of rutting on flexible surface lanes

Longitudinal profilometer follows wheel paths of test vehicles, measures wear in direction of vehicle travel. Data gathered is combined into a "serviceability index"





### **AASHO Test Shifts into High**

Continued from Page 101

The more recent WASHO Road Test, conducted by the Western Association of State Highway Officials, used specially constructed pavements, but all of the blacktop variety. This is the kind of road most frequently built in the western areas. Also, the test was limited in a number of other variables.

The AASHO test has been carefully devised to take into account as many variables as possible.

The complex test highway incorporates nearly 200 different types of construction. Ten different axle weights are being routed over it in a pattern that results in over 800 test sections. There's one stretch that carries no traffic at all. This one measures the impact of weather.

Chart on page 101 shows in simplified form what axle weights are running over what construction. "Black top" test sections range from zero (road oil treatment) to 6-in. surface, 0 to 16-in. subbase, 0 to 9-in. base. Concrete sections have both reinforced and non-reinforced surface slabs ranging from  $2\frac{1}{2}$  to  $12\frac{1}{2}$  in. thick resting on from 0 to 9 in. of subbase.

Axle loadings range from 2000 lb on the rear axle of a straight truck to 48,000 lb on each tandem of twin screw tractor plus tandem-axle semi-trailer combinations (approaching 108,000 lb GCW).

From this study of what different axle loads do to given pavement designs will also come information which could be helpful in apportioning the costs of highway construction and maintenance fairly among the various classes of users. However this function—which gets over into the field of economics—is not a concern of the research engineers at the test site. As they put it: "All we do is collect the data on pavement performance and analyze it. What happens after that is up to other agencies."

It is clear, however, that some of the findings of the test could be used in what is known as the "incremental method" of highway cost allocation. This method of apportioning highway taxes assumes that to carry automobile traffic alone you need a "basic" pavement of some certain thickness. Then, for each class of vehicle up to the largest rigs on the roads, you need to add a certain increment or additional thickness to carry the load.

The theory—and it is a hotly debated issue—is that all users should pay a proportionate cost of the basic pavement, and that each class of vehicle which causes an additional increment should pay the full cost of that as well as a proportionate cost of all increments below that one.

Many studies of the incremental tax method have already been made by the various states and the Bureau of Public Roads. However, findings of the AASHO test could help put the calculations on a more scientific basis.

Fleet operators thus have an important stake in what's going on at Ottawa. By influencing highway design standards and axle-load limit legislation throughout the nation, the test can have a salutary effect on ton-mile operating costs. These findings can also provide a basis for revising existing discriminatory highway taxes.

It is not certain, of course, that the AASHO test results will produce these benefits. The findings will be given to Congress, to members of AASHO (i.e., every state highway department in the nation), and to anyone else who's interested (at a nominal cost).

It is abundantly clear that at least part of the job of getting the test results utilized properly will have to be performed by fleet operators and other highway user groups. The need for members of the trucking industry, individually and collectively, to keep tabs on test progress and be familiar with the findings is especially great in view of the fact that foes of the industry will almost certainly become well versed on the subject.

The time schedule goes something like this . . .

- Test traffic began running last fall (Oct. '58, page 86).
  - It continues until the fall of 1960.
- In January, 1961, Congress gets the test findings as part of a report on "who pays how much for what size highway."

(TURN TO PAGE 152, PLEASE)

Generator supplies current to operate electronic equipment used to gather data as test trucks roll over road

As you might expect, mass of data collected could not be correlated except through use of "mechanical brain"





### HIGHWAY COSTS ARE GOING UP

Congress is reaching in all directions to find money to keep the building program on schedule . . . including into your pocketbook

### The Highway Price Tagin billions of dollars

In 1956, it was estimated like this . .

Interstate System Primary & Secondary	Federal \$25.1 13.4	State \$ 2.8 13.4	\$27.9 26.8
Total	\$38.5	\$16.2	\$54.7

It now looks like this . . .

Interstate System Primary & Secondary	Federal \$ 36.2 15.7	\$ 4.0 15.7	Total \$ 40.2 31.4
Total	\$ 51.9	\$ 19.7	\$ 71.6

It could go to this . . .

Interstate System Primary & Secondary	Federal \$49.3 18.8	State \$ 4.3 16.1	Total \$53.6 34.9
Total	\$68.1	\$20.4	\$88.5

HOW'S THE HIGHWAY program doing? The answer in brief: Highway costs are going-up, and more dollars are needed to make ends meet.

Chart at left shows what has happened . . . and what could happen

Back in 1956 when the building program began, the experts based it on the best figures they could foresee at that time. They estimated the total cost at around \$54.7 billion, including a 40,000-mile super Interstate Highway System and much-needed improvement and expansion for the rest of the primary and secondary federal-aid highway systems.

To raise money

for the federal government's share in financing the program (\$38.5 billion), Congress made increases in existing highway-user excise taxes, added a few new ones . . . including the weight tax on trucks over 26,000 lb.

It was a neat package. Expected revenues would equal actual expenditures by the time the taxes expired on June 30, 1972—some 16 years after.

But now, three years

later, the strings have come untied. The estimated total highway building cost now comes to about \$71.6 billion . . . up \$16.9 billion over the original \$54.7 billion estimate.

Instead of \$25.1 billion for the Interstate System the federal government now needs some \$36.2 billion. Its share of the cost of the primary and secondary highways is now estimated at \$15.7 billion instead of the original \$13.4 billion.

(TURN TO NEXT PAGE, PLEASE)

### Highway Costs ....

Continued from Page 103

Principal reasons are . . .

- Revised cost estimate for completing the original 40,000-mile Interstate System (federal share—\$8.9 billion).
- ◆ Additional cost for the Interstate System resulting from route revision plus 1000 more miles authorized (federal share—\$2.2 billion).
- Expected increase in authorizations for primary and secondary highways (federal share—\$2.3 billion).

#### But that's the

least of what they're worried, thinking and talking about. Throw these additional items in, and the total highway building price tag reaches around \$88.5 billion . . . \$33.8 billion above the 1956 estimate. Chief among these are . . .

- Payment to states for toll roads designated as part of the Interstate Highway System (cost to federal government—\$4.3 billion).
- Payments to utilities for cost of relocating their facilities due to highway improvement (federal share—\$1.5 billion).
- Interest payments if money is borrowed to keep the building pro-

### Do we need these highways?

YOU MIGHT WONDER after reading the details of the highway problem. . . . Do they cost more than they're worth? You'll be supplying the final answer.

You know what it costs you today in lost time, higher operating costs and accidents due to traffic congestion. Your drivers and vehicles are mixed-up in it daily.

Today there's about one mile of road for every 20 vehicles. This year it's estimated that some 70 million trucks, buses and passenger cars will travel some 700 billion vehicle-miles.

It's going to increase . . . estimates call for 754 billion vehicle-miles in 1961, 1 trillion in 1971, 1.2 by 1975. And history indicates that these figures are probably conservative.

You could take to the air to avoid this tangle. But if you stay on the ground, the only way is to build more miles of streets and highways.

#### What's it mean?

When you're dealing with federal spending, especially for highways, it helps to know these definitions . . .

- Fiscal year—From July I to June 30 the following year. For example, the fiscal year 1960 started on July I this year. Unless otherwise noted, data in this article is based on fiscal years.
- Authorization—The plan for spending.
- Apportionment—The dividing of the planned spending among the states.
- Appropriation—The actual granting of funds.
- Expenditure—The actual paying out of money.

As of June 30, 1959 (the close of fiscal year 1959), the federal government for the highway building program had . . . .

- Authorized spending (through 1969) some \$31.7 billion.
- Apportioned (through 1960) slightly over \$12.5 billion.
- Expended some \$4.9 billion.

gram on schedule (cost to federal government—\$9.1 billion).

• Increase in highway building costs due to inflation (some \$1.8 billion)

#### That's the problem.

It can be divided into the immediate problem now being debated by Congress and the long range problem to get the strings again neatly tied around the highway program.

The immediate problem: There's not enough money in the Highway Trust Fund to make full apportionment of funds necessary to keep the highway program on schedule for the fiscal year 1961. Chief reasons are deductions from the Fund's available balance for costs not included in the original estimates. . . .

- Almost \$2 billion spent or earmarked to pay for projects OK'd before 1956.
- An additional \$1.2 billion authorized by the "anti-recession" Highway Act of 1958.

In neither case was provision made for added revenues to go into the Trust Fund to cover these items.

#### Highway building

requires lots of advance planning, so federal fund apportionments are usually made about a year ahead. However, as of June 1, the Trust Fund had an uncommitted balance of only \$476 million. And, says the Highway Act of 1956, the building program has to be on a "pay-as-you-go" basis (no borrowing).

Result: No apportionment can

be made for the Interstate System for the fiscal year 1961. The present balance will go for the primary and secondary systems. The Trust Fund will then catch-up sufficiently so a small appropriation can be made for the Interstate System for the fiscal year 1962.

When it decides what to do with this problem, Congress can go home and start thinking about how to solve the long-range problem in its 1961 session.

Long range problem

is simply this: In order to keep the program on schedule, some \$1.7 billion a year more money is going to have to be found in addition to present Trust Fund revenues. Also in 1961, Congress will consider the equitable distribution of taxes among classes of highway users. (That's why the AASHO Road Test is so important to fleet operators.)

But the federal government is not alone in this need for more highway money. Fifty more articles like this one could be written about the financing problems of each state. So don't overlook what's happening at home or in the states where you operate.

#### Possible solutions

to the federal government's short and long range problem are much the same. Suggested so far are...

- Increasing highway-use taxes.
- Stretching out the highway building program.
- Borrowing from general funds or through a bond issue.
- Putting all high way excise tax revenues into the Highway Trust Fund.
- Taxing non-highway users for the highway benefits they receive.

Before tackling the details of each of these proposals, remember this: Special interest groups are juggling the cost figures to justify the solution they want. So fleet operators are going to have to be sharp to avoid buying a "gold brick" solution.

The Administration

wants to solve the immediate highway financing problem by increasing the federal fuel tax by  $1\frac{1}{2}\phi$  a gal... to a total of  $4\frac{1}{2}\phi$ . Principal reason: Keep the federal budget balanced.

### The Interstate Highway System —as of Dec. 31, 1958

Status	Mileage Free	Toll	Total	
Open to traffic	2,489.6	2,211.8	4,701.4	
Construction	6,718.3	43.8	6,762.1	
Engineering	16,843.3		16,843.3	
In the future	12,368.0		12,368.0	
Mileage adjustment	t cushion		325.2	
Total			41,000.0	

#### The Price Tag-as of Dec. 31, 1958

	Millions of dollars						
Highway system		Federal		State		Total	
Interstate	\$	4,669	\$	954	\$	5,623	
Primary & Secondary		3.523		3,173		6,696	
Total	\$	8,192	\$	4,127	\$	12,319	

### Are we getting them?

FOR ALL THE highway-use taxes being collected, are you getting any highway? The answer: Yes.

Chart at top shows the status of the Interstate System as of the end of last year. The "open for traffic" mileage is based on its adequacy for 1958 traffic. Logic for this basis is "the pressing need . . . to cope with present day traffic." In other words, some of this mileage is due for further improvement. Much of it was built before the present building program started and was simply designated as part of the Interstate System.

More important is the mileage involved in "construction" and "engineering." This by and large is aimed at adequacy for 1975's traffic . . . involves over half the 41,000-mile System . . . and it's at least well beyond just the planning stage.

When it comes to the rest of the primary and secondary highways, the Bureau of Public Roads rightly considers them as part of a continuing program so no mileage goal is realistic. Since the highway building program began in July 1956, the money spent for them up to the end of last year involves some 91,013 miles.

In summary, by spending some \$12 billion between July 1956 and December 1958, the highway engineers have (1) gotten-off to a healthy start, and (2) tooled-up for some gigantic highway building in the next 10 years . . . providing the financing problem can be solved.

Most national highway-user groups oppose the boost. Their reason: Users are paying more than enough taxes now. Over half the states are against it. Their reason: Fuel taxes are where they get the most of their highway building money.

Debate was still

going strong late in June. But a decision had to be made before the first of this month . . . or else a whole raft of excise and corporation income taxes would expire. Net result: Facing the tight dead-(TURN TO PAGE 172, PLEASE)



# SHOP

\$10->



Send us a short description and photograph or simple sketch of the shop-made maintenance short cuts you are using. We'll pay \$10 and \$25 to those who submit good ideas

### Shop-Built Tool Regrooves Tires on the Bus

By William Smith, foreman, Reed Garage, Cleveland Transit System, Cleveland, Ohio

Our tire regroover saves us the time, trouble and expense of removing tires from our buses for regrooving. All we do is roll our machine

under the wheels, turn it on and start cutting.

We made the machine out of heavy angle iron and steel plate. It's caster-mounted for mobility. The electric motor is 1/3 hp, 220 volt, 60 cycle, 3 phase. A gear reduction unit cuts the speed from 1620 to 50 rpm on the 2-in. diameter rollers. Rear roller is turned by chain drive powered from the front roller at the right end. The rollers are 26-in. wide to handle dual wheels.

We use No. 5 extra-heavy Ideal regroover blades which are clamped into the grooving fixture. The fixture itself is welded to a steel base plate which can be moved across the support table to groove each tire.

In operation, the machine rotates the wheels at low speed. This permits the mechanic to check the tire closely for nails, glass or other imbedded objects before he starts cutting. The slow speed also permits him to adjust the depth of the cut and prevent any damage to the carcass.



### Punch and Die Is Easy to Make

By Charles H. Willey, Route #7, Penacook, N. H.

For punching small holes in light metals, try this easily-made punch and die. Get a steel block. Drill a hole (or holes) in each end the size you most frequently use. Next, saw openings in the block as shown in the illustration. For the punch, use a piece of round steel the same diameter as the hole and turn the top smaller.

To use, insert the metal to be punched in the slot and knock out the hole with the punch. The tapered head on the punch will make it much easier to drive through and out the other side.

### Tandem Brushes Speed Clean-up

By Harry J. Miller, 991 42nd St., Sarasota, Fla.

Brushes joined in tandem and pulled around by the service truck, make short work of cleaning up large shops, drive aprons and parking lots.

Take four or five large heavy-bristled push-brooms and bolt them to a wood frame made of 2 x 6 planks. For best results, fasten the two rows together in a "V" fashion. The king-size broom should be pulled from the wide side for best results. Depending on the job, a weight on top can improve the results.

### **Puller Does A Variety of Jobs**

By G. C. Staley, Protective Motor Service Co., York, Pa.

Here's a handy puller to have around when you encounter a stubborn propeller shaft yoke or companion flange—especially when the proper puller for the job isn't available.

Take a  $\frac{5}{8}$  in. bolt about 7 or 8 in. long. Weld a large nut on the top and taper the lower end. Next, take a piece of 1-in. square stock about 5 in. long. Drill and tap this in the center (same thread as the  $\frac{5}{8}$ -in. bolt). On each side drill a series of  $\frac{3}{8}$  in. holes. These two pieces make up the basic puller.

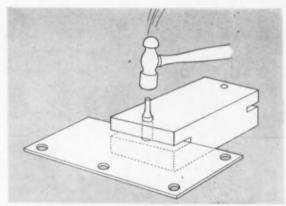
Puller can be used in various ways. Two examples are shown here. For propeller shaft yokes, the I-in. piece of stock is inserted through the two holes (see small photo). Turn down on the  $\frac{5}{8}$  in. bolt and off comes the yoke. On companion flanges, run bolts through the I-in. stock and flange and secure with nuts (as shown in the two drawings). Rest of the operation is the same.

### **Tire Rim Makes Good Hose Reel**

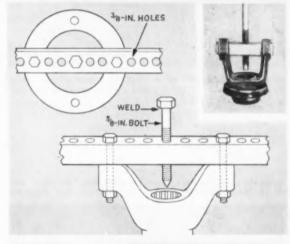
From the maintenance shop, City Garage, Orlando, Fla.

A tire rim hose reel helps remind the boys to hang hoses and cables out of the way when not being used. Each rim holds up to a dozen turns of one-inch hose when carefully hung.

The reel is easy to make. Take a drop-center truck rim and cut it in half. Then drive two steel pegs into the wall on which a section of the rim can rest. To hold it firm, tack-weld the rim to the pegs.











Drivers at Campbell 66 Express, Inc. notify their base by radio when they meet traffic tie-ups or road hazards

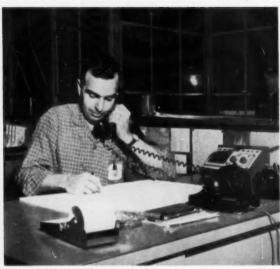
### How to Make Two-Way Radio Work for Safety

From three fleets come bright ideas for extra radio benefits at no cost

WANT SOME EXTRA DIVIDENDS from your mobile radio investment? Try using radio as part of your safety program. It works fine. And there are several ways to use it.

Campbell 66 Express, Inc., Springfield, Mo., has mobile radio installations in all major terminals. For

Campbell's dispatcher alerts other drivers so they can avoid the hazard. It saves time, reduces risk exposure



Radio in Campbell's safety supervisors' cars makes it easy for safety men to locate drivers for road checks



PU & D operations, radio is a valuable efficiency booster. As a matter of course, drivers notify their dispatcher when they face traffic tangles. The word is then passed on to other drivers in the area so they can avoid potentially hazardous conditions . . . as well as save time.

It's in the safety inspectors' cars

that radio really pays off as a safety tool, however. The fleet has five inspectors. With radio in their cars they can be immediately notified when an accident occurs and can get to the scene in a hurry.

Radio also helps the inspectors to spot-check drivers. By monitoring the fleet's messages they can tell when drivers are in their vicinity. It's then a simple matter to find the driver and check his performance. Since drivers don't know when an inspector may be around, they're constantly on their toes.

The value of radio to good

safety record is looked at in a different way in another industry—ready-mix concrete. Ed Foster, of Meekins, Inc., Hollywood, Fla., points out that a few years ago his company's safety program was in poor shape—so poor that the insurance companies were inquiring about it.

Radio helped Meekins solve the problem. The fleet received a National Safety Council improvement award in late 1958. Forty-six of the company's drivers picked up awards for a full year free of a chargeable accident.

Many of the dangerous situations

encountered by Meekin drivers occur not on the road but at job sites. Whenever this happens, the drivers contact the safety supervisor, riding in a radio equipped car. The safety man then moves to the scene immediately. The delivery of concrete is held up until the hazard is eliminated. Much of the safety supervisor's time is spent traveling from job site to job site for routine inspections. With radio in his car, he is always available to be sent to an accident scene, or more often to a site where he can prevent an accident by eliminating a hazard.

Another company found two-way radio aided its safety record . . . without any additional effort whatsoever. This was at Chippewa Motor

Freight Co.'s Chicago terminal.

One of this fleet's drivers, James H. Davis, won the national five axle championship in 1957 at the National Truck Roadeo. Chippewa Vice President Henry Wynberg said he always liked to think the accident-free safety record needed by a driver to enter the Roadeo was helped by the company's safety program. He was surprised, however, when Davis volunteered the fact that the two-way radio system also aids in maintaining a good driving record.

Davis said, "The radio aids in

driving along with all of the safety rules. The equipment is not an accessory, but a necessary practicality like lights and brakes. With a two-way radio in my truck, I am relieved of worrying about what to do when a problem comes-up concerning pickups and deliveries. I can let the dispatcher back at the terminal handle that problem. This allows me to give my attention to my real job, which is driving the 40-ft rig safely around Chicago. The problems in driving are themselves enough for a driver to worry about."

Davis pointed out that particular equipment used by Chippewa is especially conducive to safe driving. It uses a tone-coded squelch circuit designed to block out much interference caused by other fleets using the same radio channel. This means he hears only those messages originated by the Chippewa dispatcher and so is not distracted by impertinent co-channel chatter.

At Meekins, Inc., Hollywood, Fia., drivers within 75-mile range can contact base for help from safety man



Meekins' safety supervisor has radio and camera as working tools. Drivers call him when site looks dangerous



At a recent vehicle maintenance session
held at Purdue University
a fleet operator—
Bert Ogden, Vice President, Consolidated Freightways
and a manufacturer—
J. V. Bassett, Chief Engineer, Raybestos Manhattan, Inc.
in practical "shop talk" gave the low down on . . .

### **How to Balance Heavy-Duty Brakes**

HEAVY-DUTY BRAKES CAN be balanced. That's the opinion of two experts—Bert Ogden of Consolidated Freightways and J. V. Bassett of Raybestos Manhattan. They should know . . . they've had lots of experience.

We've combined what they had to say on the subject at a recent Purdue University maintenance session. Starting with Bassett, here's how to tackle the job. . . .

"Let's see how simple brake

balance is. First you must appreciate that most normal service applications are 30 psi or less. Brakes are designed for 90 psi maximum and there is usually a minimum of 90 psi available for a panic stop to prevent an accident."

Ogden agrees with the need for balancing at low pressures. He says, "This is the pressure wherein 90 per cent of your brake applications are made.

Find "as is" condition by checking drum temperature after 10 to 20 brake applications from 30 to 15 mph



A dual air gage shows when two brakes operate at different rates and can be used to spot extreme slowness



If you do not have a balance of pressure being delivered to the various axles, there is little hope of having each brake on the vehicle doing its share."

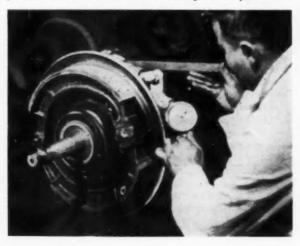
"In balancing brakes," says Bassett, "first it is necessary to determine their 'as is' condition. This is done by driving the rig, making from 10 to 20 slowdowns from 30 to 15 mph and recording the temperature of the various drums. The recorded temperature will indicate the amount of work each brake is doing."

Ogden says you can check "the heat build-up in the brake drum with a contact pyrometer. Unfortunately, I fear this method will never be widely used because of the time consuming aspect it presents. There is little hope in most maintenance shops of hooking the vehicles together and running them down the highway making several brake applications and then testing the heat of the drums, and still have all of the equipment serviced that must be serviced each day within the time limit allowed for service.

"The pressure balance should be kept, if at all possible, within 3 lb or less between axles. The method of checking this is quite simple. All that is required is a pressure gage which has dual hands on it and two lines or a pair of single indicator gages. With this simple device, it is reasonably easy for two men to check out a combination to determine whether or not pressure balance at lower pressures is being accomplished.

"The next thing the maintenance man should do is check the transmittal time of air from the brake foot valve to the rear most axle on the vehicle and to other axles in the combination from there on forward. This requires some fairly good tooling which should consist of a timer so that transmittal time can be measured in hundredths of a second. Basically what it consists of is an electrically-

Before installing drums, check each brake to see what pressure it needs to start shoes moving. Check push rod



operated stop clock, a valve which is installed in the air line at the rear of the vehicle with a predetermined setting, and an electrical contact on to the brake pedal.

"By stomping on the brake pedal, the time in hundredths of a second can be measured from the time the pedal is pushed down until such time as any predetermined air pressure reaches the brake chamber.

"A good check is (1) the time required to buildup 60 lb of air in the brake chamber and (2) the time required perhaps to build up 5 lb of air. Five pounds of air is usually the amount of air in the brake chamber necessary to get the brake shoes against the drum.

"Failing to have one of these instruments, the dual air gage will be of some assistance to the maintenance man. While it will not be possible for him to time in actual seconds the difference between the operation of the two brakes, it will at least allow him to see that there is a difference since the two hands on the gage will not move simultaneously. A well-trained operator can become quite proficient in determining when one vehicle is extremely slow as compared to the other or to the average."

### Once the extent of the imbalance is

known, Bassett says the next step is to, "disassemble the brakes, clean them thoroughly, and inspect for damaged or worn parts. Be sure to check the shoe table for squareness, the anchor pin bushing if any, the anchor pins and cam rollers for flats or soft spots, the return springs for nicks and proper weight at installed length. Many operators send all return springs to a reclamation bench where they check for weight at installed length, then match sets for weight and hold for the next reline. Any defective part should be replaced without question for the sake of safety.

"If linings are bolted, use new lock washers. A set or cracked lock washer is useless. Torque brass bolts to 24-28 lb ft so they are tight but not drawn beyond the elastic limit of the metal. If rivets are used, be sure they are the right length. The bottom of the drilled section should be at or only slightly below the surface of the shoe table. If pierced rivets are used, be sure you use the proper setting tool. These rivets will not clinch properly with the same tool used for drilled rivets due to varying wall thickness and hardness.

### "After assembly of the foundation

brake, but before the drums are installed, check each brake to see how much pressure is required to just start the shoes to move. Also check pressure for 1 in. push rod travel. If there's more than ½ psi difference between the brakes on any one axle or more than 3 psi between axles, change the return springs to balance.

"If the difference is caused by a relay valve, replace it with a new or rebuilt one. Some valves have as much as an 8 psi drop across them. These should be replaced."

(TURN TO PAGE 160, PLEASE)



### **Summer Meeting**

### Governors

At the Society of Automotive

of engine governors. A fleet man outlined his needs, a

### WHAT THE USER WANTS By Fred Hague, Sun Oil Co.

THE USER WANTS a governor that:

- Readily and accurately limits the maximum rpm of the engine to the engine manufacturers specifications.
- Is free from surge.
- Is designed for instant responsiveness to engine speed changes within the scope of its design.
- Does not adversely affect the engine power and flexibility at the governed engine speed.
- Is easily and simply installed for reliability and maintenance.

Excepting the straight vacuum type, all kinds of governor mounting drive adaptations have been made, or rather improvised. In this connection, the more recent development of road speed governors will no doubt result in overloading the already overworked transmission speedometer drive gear. Present carburetor designs, while cleverly conceived and utilized, are definitely not built for durability and reliability. For example, particularly on multi-barrelled carburetors, more attention should be paid to the geometry of the linkage and consideration given to the use of antifriction bearings at affected locations.

The question of cost rises immediately, and speaking for the consumer, I am prepared to state emphatically that a better constructed carburetor and governor control, properly balanced with each other will find ready acceptance in the industry. Better materials and more expensive units as envisioned would, no doubt, introduce merchandising problems, but their availability as optional equipment would be welcomed by the operator searching for reliability.

### WHAT GOVERNORS CAN DO By G. R. Beardsley, Ford Motor Co.

ENGINE SPEED governors are recommended for commercial vehicles where operational costs are of prime importance. In heavier classes of vehicles, users have recognized that governors are essential, and as a result manufacturers have made them standard equipment.

On the other hand, in lighter vehicle classes, standard model engines are not governor-equipped because a majority of buyers are not willing to pay the associated costs. In our opinion, a considerable number of these owners would find it profitable to purchase . . . optional engine governors.

My part of this discussion will highlight some of the areas that are affected by high speeds. The information used to illustrate these facts was not extracted from any single vehicle or manufacturer, but rather from engineering development data.

### First, let's look at

connecting rod bearing loads with wide open throttle operation combining gas pressures minus inertia forces. A comparison is made of inertia forces which exist under deceleration loads, shifting operation or part throttle conditions (Fig. 1).

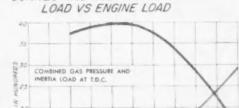
In many engines, the inertia loading will exceed the maximum gas pressure loading with resultant bearing stresses higher than those encountered under peak torque or lugging operation.

In normal operating range the of this engine is adequate to meet

oil pump capacity of this engine is adequate to meet the requirements, but at higher speeds the oil supply diminishes (Fig. 2).

### Engineers Summer Meeting last month, a seven-man panel debated the use

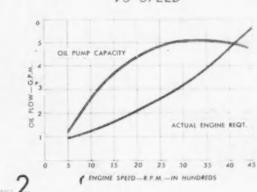
truck maker described their advantages . . .



INERTIA LOAD AT TOC

CONNECTING ROD MAX. BEARING

OIL PUMP DELIVERY VS SPEED



### Water flow is essentially a

straight line function, and would remain so at higher speeds if the water temperature were maintained up to 160 deg. However, as we all know, most vehicles operate at higher water temperatures for one reason or another-some good reasons and some bad,

At higher temperatures and speeds, the efficiency of the water pump decreases and the heat output of the engine increases.

### High stresses in valve trains result

in tappet pitting, camshaft wear and valve head failures. As an example, seating velocities may exceed safe operating levels at excessive speeds, and in particular during valve no-follow or valve toss conditions. All the valve train components respond similarly to the adverse effects of overspeeding.

### Piston speed is directly

proportional to engine speed. Engine durability and the piston and il control areas are directly related to piston speed.

Wear rates on pistons and rings are greatly increased with high piston speeds and may be effectively reduced with speed control.

### The energy required in stopping a

vehicle greatly increases with speed. It greatly increases after 30 mph. In fact, at 60 mph approxi-(TURN TO NEXT PAGE, PLEASE)

### Governors

Continued from Page 113

... and five governor manufacturers told how their

mately  $3\frac{1}{3}$  times the energy must be dissipated as compared to 30 mph.

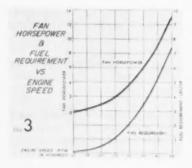
This kinetic energy is transformed into heat and has a detrimental effect on vehicle components especially brakes, tires and the suspension.

The wheel horsepower and the fuel requirements in the typical vehicle are essentially constant up to and including 30 mph. However, at higher speeds they are greatly increased. For example, the horsepower required for a typical 55,000-lb GCW vehicle is approximately 62 at 30 mph and 142

at 50 mph.

The increases in the fuel requirement are very apparent at the higher speeds. For example, to drive equivalent distances, 60 per cent more fuel is required at 50 mph than is required at 30 mph. Controlled speeds will improve fuel economy by reducing the power required.

Fig. 3 again indicates the price that has to be paid for operating at high engine speeds. The rapid rise in fuel requirement to drive the engine fan is defined below.



HOLLEY
By M. F. Sterner,
Chief Engineer

THE HOLLEY governor consists of two basic components, namely, a speed sense unit and a control or slave unit. It utilizes vacuum as the motive force. The carburetor venturi and the carburetor throttle bore below the throttle plate are the sources of this vacuum.

The use of these two sources provides higher working vacuum under heavy load conditions and also a means to modify the high light load vacuums. Calibrated orifices are used to arrive at the desired vacuum which is then transmitted to the slave unit.

The slave unit does

the actual work of moving the throttle plates to the proper position to maintain the governed speed. When a vacuum is applied to the force diaphragm, it will pull the throttles toward the closed direction against the governor spring shown. Since the Holley governor is built integral with the carburetor, it is unnecessary to use an additional set of governing throttles.

It is the function of the speed sense, or "spinner" as it is commonly called, to modulate or meter the vacuum to the slave unit. It basically is a bleed valve which responds to the speed of the unit to be governed. When the unit is at rest or below governed speed, the valve is open and therefore bleeds atmospheric air behind the force diaphragm.

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HOOF By G. D. Hedden, Sales Manager

THE VELOCITY-TYPE governor, known to most of industry as the "sandwich" governor, installed between the engine intake manifold and the carburetor, operates on a very simple principle. It is a secondary throttle plate centered in an orifice and attached to a cross-shaft mounted in anti-friction ball bearings on either end.

Unlike the carburetor, it has an unbalanced throttle plate with the long end of the plate positioned to the "up-stream" or carburetor side of the unit. The velocity of fuel and air mixture through the orifice and against the plate tends to close—and would completely close the valve were it not for the opposing action and force of a skillfully designed governor spring—which tends to open and does completely open the valve at all speeds lower than the governor setting.

This cantilever spring

is designed and calibrated to produce a force equal to the closing force of the valve at any angle from a wide-open to a closed position. For example: At a no load engine speed, the spring force and closing force of the valve are exactly balanced to hold the valve in a positive position to allow maximum required engine speed.

When load is applied, the engine tends to slow down, which reduces the velocity of fuel and air mixture and the closing force against the valve, upsetting the balance of the

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### units operate and gave some tips on getting the most out of them

### KING-SEELEY By R. G. Morey, Product Engineer

MANY DESIGNS OF air flow governor are manufactured by various companies. One type, the King-Seeley "Vari-Speed" governor, will be discussed here.

In the early twenties, progress had already been made on this type of unit. In this governor, as well as those now produced, the control of the air-fuel mixture was accomplished by placing the throttle shaft off center either in the carburetor or a throttle body below the carburetor. This was done to establish an unbalanced condition on the throttle plate.

### The combustion mixture

impinging on the governor plate created a closing torque on the throttle shaft. A lever attached to the throttle shaft was connected to springs and linkages so designed that they would position the throttle plate in the air stream according to the air flow. This positioning maintained a desired engine speed from full load to no load.

During these early days, with a pulley on the throttle shaft and the string wound around the pulley, the unbalanced plate load was measured by a spring scale suspended above the pulley and attached to the string. Based on this simple test, the pulley was reshaped to provide variable radii. This change controlled the engine over a wider range of loads using the same spring. The next step was a cam which provided a varying lever arm

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### PIERCE By L. V. Bradnick & L. E. Boren

WE OFFER THREE general types of governing for vehicles: (1) A mechanical engine speed governor, the primary purpose of which is to limit the maximum speed of the engine without interfering with the power output, (2) A roadspeed governor, the function of which is to control the vehicular speed by controlling the propeller shaft speed, regardless of gearing and engine speed (3) A transmission switch govenor for shifting certain types of automatic transmissions from torque converter into direct drive. Our current production here is for intra-city bus applications.

One example of an engine speed governor is of the enclosed linkage type that controls an auxiliary butterfly in the valve box mounted between the manifold and carburetor. The governor shaft, which is driven by gearing on the engine camshaft, carries a pair of fly weights which are mounted so as to be free to pivot about their respective weight pins.

### The weight noses

engage the flange of an axially-mounted sleeve and transmit the centrifugal forces to the governor yoke through a thrust bearing. These forces are controlled and balanced by the governor spring adjustably fastened to the control lever. The movement at the terminal of the control lever is transmitted to the throttle by linkage.

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### STEWART-WARNER By P. N. Hanebuth, Project Engineer

OUR approach to governing has been the development of an engine speed control that is effective while still being simple and trouble-free. By avoiding complex auxiliary control forces and utilizing only the velocity principle, this governor has become what we consider a practical approach for light trucks and passenger cars.

The governor is installed between the carburetor and the intake manifold. Installation is not difficult. Most installation kits consist only of gaskets, studs, throttle rod extension, and seal wire. Longer studs and throttle rod extension are necessary because the carburetor has been raised a distance equal to the thickness of the governor. No special fittings, valves or complicated piping is necessary.

### To control the

governor throttle plate properly, a tension spring attached to a four-bar mechanism is utilized. In this manner it is possible to obtain the desired rate of action at the proper time. The throttle plate is similar to that used in the carburetor but mounted off center. The impingement of the air-fuel mixture on the unbalanced part of the throttle plate as it passes through the governor tends to close it. This force is opposed by spring tension which tends to hold the throttle plate in an open position.

As the engine speed increases, (TURN TO PAGE 222, PLEASE)

### **Keep Air Out of the Coolant**

Air contributes to engine efficiency but not when it gets mixed with the coolant. All it does there is make trouble

DO YOU HAVE an engine "overheating" problem you can't seem to beat? It might be due to air in the coolant.

The "whys" and "wherefores" of the problem were discussed by R. G. Jensen (Perfex Corp.) and by J. C. Miller (Cummins Engine Co.) at the SAE Summer Meeting.

Here's what happens, they say, when air gets mixed (entrained) in the coolant. . . .

- Poor engine cooling. The more air, the less heat the coolant can pick-up, carry or dissipate.
- Reduced coolant flow. Air cuts water pump efficiency, especially centrifugal types. It can completely stall the pump at worst.
- Premature engine and parts failure. Their life is shortened when metal temperatures go above design limits. This can happen, says Jensen, "before excessive coolant temperatures are noted."
- · Continued loss of coolant. The more air, the

greater the expansion of the coolant as it heats. Excess goes out the overflow, can only be replaced by more air as the air/coolant mixture contracts when engine is shut down.

- Engine block corrosion. Oxygen in the "entrained" air readily combines with iron to form iron oxide commonly known and cussed at as rust.
- Radiator corrosion. Air in the coolant causes a loss of anti-freeze inhibitor, can make it an active corroding agent. Acid readings up to pH 5 have been noted, and, says Miller, "such a solution would be corrosive whether in or out of an engine."

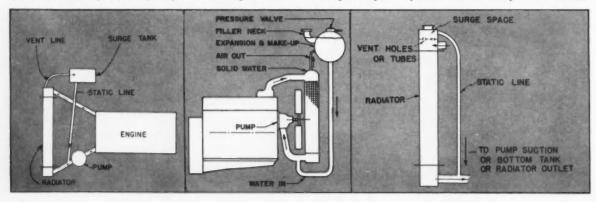
### Careful PM to

keep the cooling system air tight (hose clamps, engine gaskets, pump seals and the like) helps correct the problem. Pressure caps help by raising coolant boiling points and by promoting positive suction at the pump.

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One way to keep air out of the coolant is to keep air out of the top radiator tank. Diagrams below show the plumbing necessary. Main principle is to keep coolant

entering the top tank from engine below coolant level in top tank. Addition of surge tank or space does this, also gives "quiet" spot for air to escape from coolant



### CONSTRUCTION FLEET MAINTENANCE

### 1959 EQUIPMENT SPECIFICATIONS

Compiled by the Editors of Commercial Car Journal

### For further information about the equipment included, write . . .

Acme Iron Works (Ingram), P. O. Box 2020, San Antonio 6, Texas Allis-Chalmers Mfg. Co., Milwaukee 1, Wis. Austin-Western Works, Construction Equipment Div., Baldwin-Lima-Hamilton

Browning Mfg. Co., P. O. Box 2707, San Antonio, Texas Buffalo-Springfield Roller Co., 1210 Kenton St., Springfield, Ohio

Corp., 601 Farnsworth Ave., Aurora, Ill.

J. I. Case Co., 700 State St., Racine, Wis.
Caterpillar Tractor Co., Peoria 8, Ill.
C. H. & E. Mfg. Co., 2849 North Palmer St., Milwaukee 12, Wis.
Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y.
Chrysler Corp., Marine & Industrial Engine Div., Detroit 21, Mich.

Clark Equipment Co. (Michigan), Construction Machinery Div., Chicago 1, Ill. Continental Motors Corp., Muskegon 82, Mich. Crane Carrier Corp., P. O. Box 5008, Tulsa, Okla.

Crane Carrier Corp., P. O. Box 5008, Tulsa, Okla. Cummins Engine Co., 5th & Union Sts., Columbus, Ind. Curtiss-Wright Corp., South Bend Div., South Bend 23, Ind.

Davey Compressor Co., Rotary Drill Div., 600 Franklin Ave., Kent, Ohio Deere & Co., 3300 River Drive, Moline, Ill.
Detroit Diesel Engine Div., General Motors Corp., 13400 West Outer Drive, Detroit 28, Mich.

Deutz, see Diesel Energy Diesel Energy Corp. (Deutz), New York 5, N. Y. Dodge Div., Chrysler Corp., Detroit 31, Mich. Duplex Div., Warner & Swasey Co., 830 East Hazel St., Lansing 4, Mich.

Eimco Corp., Salt Lake City, Utah Euclid Div., General Motors Corp., 1361 Chardon Rd., Cleveland 17, Ohio

Euclid Div., General Motors Corp., 1361 Chardon Rd., Cleveland 17, Ohio Fabco, see F. A. B.

F. A. B. Mfg. Co., Oakland 8, Cal.
Federal Motor Truck Co., Detroit 9, Mich.
Ferguson, see Shovel Supply
Ford Motor Co., American Rd., Dearborn, Mich. (Engines)
Ford Div., Ford Motor Co., American Rd., Dearborn, Mich. (Trucks)
Ford Motor Co., Tractor & Implement Div., Birmingham, Mich. (Front End Loaders)
FWD Corp., East 12th St., Clintonville, Wis.

Galion Iron Works and Mfg. Co., Galion, Ohio Gardner-Denver Co., South Front St., Quincy, Ill. General Motors, see Detroit Diesel Engine GMC Truck & Coach Div., General Motors Corp., 660 South Boulevard East, Pontiac 11, Mich.

Hall-Scott, see Hercules Hercules Motors Corp. (Hercules, Hall-Scoot), 101 11th St., South East, Canton 2, Ohio

The Frank G. Hough Co. (Payloader), Sunnyside Ave., Libertyville, Ill. Huber-Warco Co., 202 North Greenwood St., Marion, Ohio

Ingersoll-Rand Co., Phillipsburg, N. J.
Ingram, see Aeme Iron Works
International-Drott, see International Harvester
International Harvester Co., 180 North Michigan Ave., Chicago 1, Ill. (Trucks)
(TURN TO PAGE C32, PLEASE)

### Here's What You'll Find . . . .

### **Engine Service Data**

Handy tables to speed your engine overhaul, repair, service

Allis-Chalmers	. C2
Caterpillar	
Chrysler	
Continental	. C4
Cummins	
Ford	
General Motors	
Hercules	
International Harvester	C10
P & H (Harnischfeger)	. C7
Roiline	
Waukesha	

### **Engine Specifications**

Basic engine data to help you pick the right engine

Gasoline Engines	 C15
Diesel Engines	C17

### **Equipment Specifications**

Easy reference charts for your use in choosing new equipment

Heavy-Duty Trucks	 C20
Dumpers	
Front End Loaders	
Graders	
Scrapers	
Crawler Tractors	-
Powered Rollers	C29
Air Compressors	

### **ENGINE SERVICE DATA - Allis-Chalmers**

2 ALLIS-CHA	Engine Model  Number of Cylinders Bere In. Piston Dislaterement (Qu. In.) Developed Horsopower at RPM.	Oil Pressure at RPM Minimum tide Speed (RPM) Maximum tide Speed (RPM) Governed Speed at Full Load (RPM) Compression Ratio Compression Pressure at 600 RPM (Lb.)	Valves Seat Angle (Deg.) Seat Width In. Valve Guide Clearmee Intake; In. Valve Guide Clearmee Intake; In. Spring Length – Kee In. Spring Length – Valve Clead (in.) Spring Length – Valve Clead (in.)	Valve Timing Ander Opens BTDC (Deg.) Intel Chosse ABDC (Deg.) Exhaust Opens BBDC (Deg.) Exhaust Closes ATDC (Deg.)	Cranicitus (n.) Main Bearing Journal Diameter (In.) Cranicipi Journal Diameter (In.) Cranicipia Journal Diameter (In.)	Main Bearings Bearing Clearance (In.)	Connecting Rod Bearings  Searing Clearance (In.)  Side Clearance (In.)  Bearing Bore (Cap in Place) (In.).	Cylinders Liner Inside Diameter (In.) Liner Flange Outside Diameter (In.) Liner to Block Clearance (In.)	Pistons and Rings Dameter—Top of Piston (In.) Dameter—Battom of Skiri (In.) Clearance—Piston Skiri to Cylinder (In.)		Nut and Bolt Torque Values  Natin Bearing Cap Retaining Nut  Center Mari Bearing Cap Nut  Control Mari Bearing Cap Nut  Control Mari Paring Cap Nut  Control Mari Paring Cap Nut  Colinder Peac Stud Nut (Pt. Lt.).	Capacities Contacting System (Qts.) Conting System (Qts.) An Clauser (Pts.) An Universe (Pts.)	Engine Lubrication 90 Degrees and Above. 22 to 50 Degrees. 0 to 32 Degrees. 0 Degrees and Below.
	WD-45 4 0000 4 5000 228 0 50 1400	1722 400-500 1677-1722 1400 8 50 125	45 .0628 .0045 .0078 .0045 7 .3128 1 .8128 1 .4375	20 00 CT	2, 436, 2, 478 2, 374, 2, 375 , 003, 007		. 0010 0030 . 004 008 2. 4495-2. 5005	4.000	3, 976 3, 997 , 0025 , 0035	. 0010 - 0015 . 00100015 . 0010 0015	88 8 8 8 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	182	930
LMERS	D230 6 4375 4 1250 230 1625	29-8423 528-560 1975-2025 1625 15.50 375	46 . 0625 - 1250 . 0015 - 0030 2 . 0313 1 . 7500 1 . 4063	140	2.497-2.498 1.998-1.999 .002006	,0023-,0045	, 0015-, 0035 , 002-, 037 2, 1500-2-1605	3,4379-3,4385	3.409-3.413 3.432-3.434 .00400050	.00300060 .00200040 .00150025 .009014	125-135 175-135 30-40 95-105	& 12 57 € 80 ± 80 €	40 30 20W 10W
	0.262 8 3.8628 4.3780 262.0	6.00 1850 15,70	46 .0313 .00150030 .00150030 1.7500 1.4063	14 88	2 - 497 - 2 - 498 1 - 998 - 1 - 999 . 002 006	,0023 -,0045	.00150035 .002037 2.1639-2.1803	3.5625	3,5574.3,5583	.0030 .0050 .0020 .0040 .0015 .0035 .008 .018	120-130 120-130 45-55 95	61 61	30 20 20 20 10W
	HD-344 4.4375 5.5625 344.0 66.5:1800	500 - 550 500 - 550 1900 - 1955 15.00 370	48 . 0469 . 0626 . 0026 . 0040 . 0022 . 0040 2 . 3128 1 . 8125	2 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	3.498-3.499 2.772-2.773 .006012	.0020 .0047	.0015 .0040 .034 .011 3.025 3.0235	4.4385 4.4385	4.406-4.410 4.431 .00520077	. 0045 - 0050 . 0015 - 0035 . 0020 - 0030 . 016 - 023	160-170 210-230 120-130 100-185	34 4 4 2 4	40 30 20W 10W
	HD-516	500 600 500 600 1955 2015 1800 390	48 .04690825 .00200040 2.6663 2.3126 1.8125	28 88 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	3.498-3.499 2.772-2.773 .006012	.00200047	.00150040 .004 .011 3.0230-3.0255	4,4365 4,4385	4.431 .052.0077	. 0045 . 0050 . 0015 . 0038 . 0020 . 0040 . 015 . 023	160-170 #18-230 120-130 180-186	8 17 60	40 30 20W 10W
	ADS-516 6 4.4375 5.5625 5.60 120-1000	45,1800 540,550 1730,1800 1600 14,20	45 . 0469 0625 . 0020 0040 . 0020 0040 2 . 3125 1 . 8125	30 00 00 00 00 00 00 00 00 00 00 00 00 0	3.498-3.499 2.772-2.773 .006012	.0020-,0047	. 0015 - 0040 . 004 - 011 3.0250-3.0255	4.4365 4.4385	4.406-4.410 4.431 .00520077	. 0046 - 0060 . 0015 - 0035 . 0020 - 0040 . 015 - 023	216-230 170-180 120-130 180-185	85 to 80 to	40 30 20W 10W
	TDS-516 6 4.4378 6.5628 516.0 186.200	46, 2400 6000 -550 2200 14, 20 370	48 . 0489 0625 . 0020 0040 . 0020 0040 2. 6853 2. 3125 1. 8125	2868	3.498.3.490 2.7715-2.7725 .008012	.00200047	.00150040 .004011 3.0250-3.0255	4,4365 4,4385	4.406-4.410 4.431 .005008	. 0040 - 0060 . 0015 - 0038 . 0020 - 0040 . 015 . 023	160-170 210-230 120-130 180-185	88 -1 5 2 - 1 8	40 20W 10W

### Allis-Chalmers - ENGINE SERVICE DATA

21000	6 5.2600 6 5.5000 9.00 6 5.5000 9.85.0 600 4.225 18.25 600	8		3,746 3,746 3,746 3,746 3,249 015 .007015				015 .013 .015 .009 .0000 .0000 .0000 .0000 .0000 .0000 .0003	160-170 245-270 150-160 180-190	332	40 300 200W 100W	
DS-844 16000	6. 2500 6. 3600 100 150 18001 00 460	45 0035 0055		3.746 3.745 3.745 3.746 3.249 3.007015		.00150040 .004011 3.4995 .3.5000	5.282 6.221 004	.013 .0030 .0015 .0015	160-170 245-278 150-160 180-190	32 32 100	40 30 20W 10W	
-	6.2500 8.500 8.500 8.450 2.280.2100 2.280.2150 0.00 1350 115	45 0025 .089 .0 0035 .0020 . 2.2500 . 2.7500 . 2.2031	330	3.745	.0018-,0048		6.217	5.237 6.237 .013 .0040 .0015	160 170 245 270 135 140 180 183	62 36 12 135	40 30 20W 10W	
44 HDS-844	6 2500 6 5000 8 44 500 90 223 1800 1830 1900 1830 1900 1830 1900 1830 1900	45 .0050 .0020 .0040 .0040 2.7500 2.7500 2.7500	38 38 38 70 70	3.745 3.746 3.248 3.248 3.248 15 .005 .015	.0021 .0048	000 .0025 .0050 .004 .0110 3.499\$ 3.5000	5.252 6.2510-5.2520 6.227 6.227 6.227 004 .001	5, 237 6, 237 0130 0040 0015 0016	245 275 150 160 136-140 180 189	80 30 112 135	40 30 20W 10W	
844 TD-844	6. 5500 6. 5500 6. 5500 6. 5500 7. 740 7. 74	45 .0055 .0020 .0 .0055 .0020 .0 .0055 3.2500 .2.7500 .2.7500	20 4 4 4 1 1 5 5 1	3,746-3,746 3,2485 3,248-3,248 5,006-,015	.0027 .0048	.00280050 .004009 .004009 3,4895-3.5000	6.217 6.217 .001	5.22.6 5.240 5.240 .0010 .0040 .0015	160 170 245 278 135 140 180 185	8 32 8 100	40 30 20W 10W	
4 HDT-844	6.5200 6.5000 6.5000 6.5000 226.1825 45.1800 1900 1825 13.00	48 0025 . 0489 . 0 0035 . 0020 . 0 0055 3.2500 2.7500 2.2031	335	3.745.3.746 3.2475.3.2485 .007015	48 .0021 .0048	. 0028 . 0050 . 004 . 011 . 000 3 . 4999 3 . 5000	5.281 6.282 6.217 6.221 .001 .004	5. 209 5. 213 5. 227 5. 228 2	160 170 245 275 135 180 185	31 35 135	80 20W 10W	-
HD-844	6.5200 6.5000 6.5000 184.160 50.740 1630.770 1630.770 1631.74	46 .043900 .0020002000 .004000 3.2560 2.7500 2.2031	15.50	3.745.3.746 3.246.3.249 .005.,015	.0021 .0048	.0028 .0050 .004 .011 3.4995 3.5000	5.251 5.252 6.217 6.221 .001 .004	5.22 5.225 5.246 5.241 0.001 0.001 0.0040-0.000 0.0015 0.0015 0.0015 0.0016	160 170 245 275 135 140 180-185	28.80	40 30 20W 10W	
Engine Model	Number of Cylinders.  Bare (In.).  Bare (In.).  Painon Displacement Cu. in.)  Developed Horsapaver at RPM Maximum Idle Speed (RPM)  Maximum Idle Speed (RPM)  Governed Speed at Full Load (RPM).  Compression Pressure at 800 RPM (Lb.).	Valves Seat Angle (Deg.) Seat Angle (Deg.) Seat Width (In.) Seat Width (In.) Valve Guide Clearance Intake (In.) Valve Guide Clearance Exhaust (In.) Spring Length Valve Closed (In.) Spring Length Valve Closed (In.)	Valve Triming Inlet Opens - BTDC (Deg.) Exhaust Opens - BBDC (Deg.) Exhaust Closes - ATDC (Deg.)	Crankshaft Main Bearing Journal Diameter In. Crankgin Journal Diameter In. Crankshaft End Clearance In.	Main Bearings Bearing Clearance (In.)	Connecting Red Bearings Bearing Clearance (In.) Side Clearance (In.) Bearing Bore (Cap in Place (In.)	Cylinders Liner Inside Diameter (In. Liner Flange Outside Diameter (In. Liner to Block Clearance (In.)	Pistons and Rings Diameter Top of Piston In. Diameter Top of Piston III. Clearance Piston & Skirt In. Clearance Piston & Skirt In. Clearance Piston Skirt In. Top Ring In. Congression Rings In. Oil Rings In. Ring Sap In.	Nut and Boit Torque Values Main Bearing Cap Retaining Nut Center Main Bearing Cap Nut Only Connecting Red Bearing Cap Nut Cylinder Head Stud Nut Ft. Lb.	Capacities Cooling System (Qts.) Engine Crantecase (Qts.) Air Clasmer (Pts.) Fuel Tank (Cals.)	Engine Lubrication 90 Degrees and Above 32 is 90 Degrees 0 to 32 Degrees 0 Degrees and Below	and the same of th

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TITTIO .	i	41.	į	מאס		13					
Engine Model		F162	F226	F244	M330	M363	B427	T427	U501	R602	\$820
Number of Cylinders Bore and Structor (In.) Paten Displacement (In.) Herespewer at RPM (Bare Engine) Oil Pressure (Ib.) Maximum idle Speed		4 3-7-x45-4 162 49-2400 20-30 560-600	6 3-hx454 226 73-2400 20-30 880-800	34x494 244 244 79-2400 20-30 880-600	6 4x4% 330 104.4-2400 40-50 550-600	6 4x41 383 129-2800 40-50 550-600	6 4 4 x 4 7 6 427 400 40 50 880 600	6 4.5 x 4.7 6 427 140-2400 40-50 550-600	41/5±51/4 801 100-2400 55-65 550-600	6 47,418)-6 002 191.7-2400 35-65 500-600	81,51514 802 237-2200 35-65 830-600
Ignitien Distributor Retailee—Drive End Cam Angle (Deg.) Point Gag. Resider Arm Spring Tension (Oz.) Sperk Cocurs. Firing Order Firing Order Lecation of Timing Indicator		CW 32-35 17-23 17-23 Variable 1-3-4-2 FwH	2VW 32-35 .020 .17-23 Variable 1-5-3-6-2-4 FwiH	CW 32-35 .020 17-23 Variable 1-5-3-6-2-4 FwH	CW 32-35 .020 17-23 Variable 1-5-3-6-2-4 FwH	CW 32-35 .020 17-23 Variable 1-5-3-6-2-4 FwH	CW 32-35 .020 17-23 Variable 1-5-3-6-2-4 FwM	CW 32-35 .020 17-23 Variable 1-6-3-6-2-4 FwH	CW 32-36 .020 .17-23 Variable 1-8-3-6-2-4 FwH	CW 22–35 .020 17–23 Variable 1-5-3-6-2-4 FwH	CW 32-35 .020 17-23 Variable 1-5-3-6-2-4 FwH
Valves Valve Seat Angle (Deg.) Intake Linke Valve Tagget Chearmee* (In.) Intake Linke		460	30 45 014	54 450 410 410	36 45 017 .020	30 45 .017	45	16 46 .017	30 30 020	36 45 .020 .024	15 45 .020 .020
Cylinder—Rebore Maximum Allowabie Taper (In.) Maximum Allowabie Out of Round (In.)		98	.000	100	100.	.000	100	100	100	100.	100
Pistona Piston Top Clearance (In.) Piston Skirt Clearance (In.)		.003	.003	.003	900	900	500	900	900	800	800
Ring Sep Chearance No. 1 (In.) Ring Cap Chearance No. 2 (In.) Ring Cap Chearance No. 3 (In.) Ring Cap Chearance No. 3 (In.) Ring Sub Chearance No. 6 (In.)		017 - 007 - 020 - 010 017 - 007 - 022 - 010 017 - 007 - 022 - 010 017 - 007 - 018 - 008 0084 - 0025 - 008 - 001 0084 - 0025 - 008 - 001 0084 - 0025 - 008 - 001	. 020 - 010 .020 - 010 .020 - 010 .016 - 008 .003 - 001 .003 - 001	017-007 013-006 017-007 018-011 017-007 018-011 017-007 018-011 008-003 008-001 008-003 008-001 008-003 008-001	. 013 006 . 016 011 . 026 011 . 026 011 . 036 011 . 0035 0015 . 0035 0015 . 0035 0015	. 013 008 . 016 011 . 025 011 . 018 011 . 0035 0015 . 0035 0015 . 0035 0015	. 023 013 . 023 013 . 023 013 . 023 013 . 0045 003 . 0045 003 . 0025 003	023 - 013 023 - 013 023 - 013 023 - 013 0046 - 003 0045 - 003 0025 - 001	0260-010 0260-010 0250-010 0250-010 0250-010 0036-002 0038-0002 0033-0015	020 - 010 020 - 010 020 - 010 020 - 010 0036 - 003 0036 - 003	.032 - 022 .032 - 022 .032 - 022 .032 - 022 .032 - 022 .004 - 003 .004 - 003 .003 - 0018
Grankshaft End Play (In.) Main Bearing Journal Diameter (In.) Geneeting Red Journal Diameter (In.)		. 006 604 2. 250-2. 249 1. 8375-1. 9365	2,3762-2,3744 1,9375-1,9365	2.3762-2.3744 1.9375-1.9365	.008008 2.824-2.623 2.249-2.248	.008005 2.624-2.623 2.249-2.248	. 006 005 2. 874-2. 873 2. 498-2. 498	2,874-2,873 2,499-2,498	. 010 006 2. 7485-2. 7475 2. 7485-2. 7475	.010006 3.260-3.249 3.000-2.999	3.750-3.749 3.500-3.489
	Qts.)	455	3 17 16	8+1 17 16	337	33 11	377	337	12+2 40 25	# # # # # # # # # # # # # # # # # # #	18+6 34
							t		:=		
Lubrication A.P.I. Service Classification. A.P.I. Service Classification. Allinus 10 Deg. Plus 12 Deg. Plus 12 Deg.		MM 5W-20 10W-30 20W 30	MM 6w-20 10w-30 20W 30	MM 5W-20 10W-30 20W 30	MM 5W-20 10W-30 30 40	MM 5W-20 10W-30 40	MM 5W-20 10W-30 30 40	MM 5W-20 10W-30 30 40	MINE 5W-20 10W-30 40	MM 5W-20 30 40	MM 5W-20 10W-30 30 40
N.L.											

90 to 100; 1k\* -130 to 140; 5,8\* -145 to 155, 1k\* -20 to 25; 5,8\* -35 to 40; 1k\* -70 to 75; 45g\* -85 to 95; 1k\* -100 to 110; 5,8\* -145 to 155.

NM—Not Measurable.

- 3, 20 to 25, 36, 31 to 40; 1, 70 to 73, ½ 85 to 95; 36 - 100 to 110.

ABBREVIATIONS AND REFERENCES

GW-Clockwise rotation. FwH-Flywheel Housing.

### Continental - ENGINE SERVICE DATA

11 - 14 - 15 to 20; 94 - 25 to 30; 18 - 30 to 55; 24 - 80 to 90; 14 - 100 to 110; 96 - 130 to 140.

\*\*\_f\* \_\_20 to 25; \$4\* \_\_35 to 40; 7\* \_\_ 70 to 75; \$4\* \_\_85 to 13; ?4\* \_\_ 100 to 110; \$4\* \_\_145 to 155.

1—36"—35 to 40; 14"—70 to 75; 35"— 90 to 100; 14"—130 to 140; 36"— 145 to 155.

70 to 75; 34,—85 to 45; 14,—100 to 110.

FWH—Flywheel Housing.
NM—Not Measurable.
--Replace abserve if worn over .008.

Engine Model  Number of Cylindera  Bore and Strike (in.)  Platen Districtment (in.)  Platen Districtment (in.)  Platen Districtment (in.)  India Cyde  First Orde  Exhaust  Valve Seat Angle (Dee)  India  Exhaust Hot unless otherwise specified.  Cylinder—Rebore  Maximum Allowable Out of Recent (in.)  Maximum Allowable Out of Recent (in.)  Ring Gao Clearance No. 2 (in.)  Ring Gao Clearance No. 2 (in.)  Ring Gao Clearance No. 3 (in.)  Ring Gao Clearance No. 3 (in.)  Ring Suid Clearance No. 3 (in.)  Ring Suid Clearance No. 2 (in.)  Ring Suid Clearance No. 3 (in.)	Engine Model	2 D129 GD157 ED201  34,237, 35,445, 40,4515, 1129, 200  36,400 30,40 600 10,20  80,40 800 10,20  80,40 800 10,20  80,40 800 10,20  80,40 800 10,20  80,40 800 10,20  80,40 800 10,20  80,40 800 10,20  80,40 800 10,20  80,40 800 10,20  80,40 800 10,20  80,40 800 10,20  80,40 800 10,40  80,40 800 800 10,40  80,40 8	## CD 201  4	HD260 30-40 200-200 30-40 30-40 30-40 30-40 30-40 30-42 48 48 48 48 48 48 48 48 48 48	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	TD427  4774454  4774454  4774454  4774454  4774454  4774454  477446  4	E #\$222 27 99 00 00 00 00 00 00 00 00 00 00 00 00	RD572 64,4394 614,4394 6176 600 600 600 600 600 600 600 6
Main Bearing Journal Diameter (In.). Connecting Food Journal Diameter (In.). Connecting Food Journal Diameter (In.). Considerate (Qts.). Confing System—Engline and Radiator (Qts.).		2.375-2.314 2.0625-2.0818 5+1 20 13	2.280-2.200 2.280-2.200 20 15	2.803-2.488 6+2 24 15	2.750-2.748 11+2 36	2.500-2.403 8+2 37		3.000-2.899 14+8 64 34
Fuel Tank (LAIN.) Tensions (P. L.Ds.) Connecting Red Bearings Nain Bearings Cylinder Head Studs Flywhee Bolls Manifold Studs	2	* * * * *		••••	0 0 to 00	* * * * * * *		
Lubrication A.P.I. Service Classification A.P.I. Service Classification Phas 10 Deg. Phas 25 Deg.	DG 8W-20 10W-30 10W-30	DG 5W-20 10W-30 10W-30 10W-30	DG 5W-29 10W-30 10W-30 10W-30	DG 5W-20 10W-30 10W-30 10W-30	DG 8W-20 10W-30 10W-30 10W-30	DG 5W-20 10W-30 30		DG 5W-20 10W-30 30 40

ABBREVIATIONS AND REFERENCES CW—Clockwise rotation.

### ENGINE SERVICE DATA - Chrysler, Ford

<b>C6</b>	CHRYSLER	ER			FORD					
	Engine Model	30, 31	32, 33	54, 56A	Engine Model	272, HD272	282	312	L332	401, 477, 534
	Number of Cylinders	9	6 4378	60 0	Bore (In.)	3.6200	3,7500	3.8000	3.8000	4.12001
	Stroke In. Piston Displacement Cu. In.	4.6250	4.7500	3.8002 315.02	Stroke In.	3.3000	3.3000	3.4400	3.6600	3.75001
	Developed Horsepower at RPM Oil Pressure at RPM	73 2800 50 2000	88 2800 50 2000	114 28003	Piston Displacement Cu. In.	272.0	292.0	312.0	332.0	401.01
	Minimum Idle Speed RPM	900 920	200 220	800 850	Torque at RPM   Ft. Lb.	250 23005	268 2400	287-2400	305 20004	
		cw	CW	W.	Idle Speed (RPM)	475-500	475 500	475 500	475 500	
		.018020	.018020	28 .015 .018	Compression Ratio	8.336	8.03	8.03	7.69	7.50
	Spark Occurs (Deg.) Fining Order Location of Timing Indicator.	2 8TDC 153624 Pulley <sup>1</sup>	2 BTDC 153624 Pulley	5 8TDCs 18436572 Vib. Damp.	Ignition Initial Trining (Deg.) Maximum Advance (Deg.)	10 BTDC	4 BTDC	10 BTDC	4 BTDC	4 BTDC
	Valves Valve Seat Angle (Deg.)				Breaker Contacts Breaker Contact Cap In.	.014 .016	.014018	.014016	.014 .016	.014 .016
	Intake Exhaust Valve Tappet Clearance (In.)* Intake Exhaust * Hot unless otherwise specified.	45 45 015 015	45 45 010 014	45 Hyd. Hyd.	Spark Plugs Type Size (Mm.) Gap Im.)	18 .028 .032	18 .028-,032	18	18	18 .028 .032
	Cylinder Max, Allowable Taper (In.) Max, Allowable Out of Round (In.)	010.	010.	010.	Valves Valve Stem to Guide Clearance (In.) Valve Stem to Guide Clearance (Exhaust) Valve Seat Annie (Dea.)	.005	.004	900.005	900	.001002 .00180032 45
	Piston Skirt Clearance (In.)	.0002 .0012	.0002 .0012	.00050015	Valve Seat Width Intake) Valve Seat Width Exhaust		0.000	.020	070	.090 .105
	Ring Gap Clearance, No. 1 (in.) Ring Gap Clearance, No. 2 (in., Ring Gap Clearance, No. 3 (in., Ring Gap Clearance, No. 4 (in.)		.007 .017 .007 .015 .007 .015	.010 .020 .010 .020 .010 .020 None	Valve Seat Rumout Tapper Clearance (Exhaust) Hot Valve Seat Interference Angle Deg. Valve Saring Tension Open In. Valve Spring Tension Closed In.	. 0025 . 018 . 018 . 161-177 (a 1.39	. 0025 . 019 . 019 161 177 (a 1.39 71 17 (a 1.78	. 0025 . 019 . 019 . 177 (a. 1. 39 71 - 79 (a. 1. 78	.0025 .019 .021 161-177 (// 1.39	. 0025 . 020 . 020 . 178 192 (a 1.28 84 89 (a 1.70
	Ring Side Cleannec, No. 1 (n.) Ring Side Cleannec, No. 2 (n.) Ring Side Cleannec, No. 3 (n.) Ring Side Cleannec, No. 4 (n.)	.0025 .0040 .0020 .0035 .0010 .0025	.0028 .0040 .0020 .0038 .0010 .0025 .0010 .0028	.0016 .0030 .0010 .0028 .0010 .0030	Cylinders Maximum Cylinder Bore Taper (In.) Maximum Cylinder Bore Out of Round	0000	0800	0800	0900	900.
Сом	Crankshaft End Play (In.) Main Bearing Journal Diameter (In.) Connecting Red Journal Diameter (In.) Crankcase Capacity (Qt.)	.003007 2.5000 2.0600	.003007 2.5000 2.1200	.002007 2.4995.2.5005 2.2490.2.2500 5	Crankchaff End Play (In) Connecting Rod Side Clearance Flywheel Runout (In.)	010	010	.0192	0192	.010
MERCIAL CAR		45 56 80 85 30 32 60 32 15 20	45.50 80.85 86.72 30-32 60 15.20	84 80 80 80 80 80 80 80 80 80 80 80 80 80	Pistons and Rings Piston Pin Clearance in Piston Side Clearance Top Ring In. Second Ring In. Ring Gap (In.)	. 0008 . 0060 . 0060 . 010 0273	.0006 .0060 .0560 .010 .0273	.0008 .0060 .0060 .0120283	.0008 .0060 .0060 .010 .027	.0003 .0005 .0030 .0046 .0030 .0046 .0018 .0030
	Lubrication A. P. 1. Service Classification Minus 10 Degrees Plus 10 Degrees Plus 50 Degrees Plus 50 Degrees	MS 20W 30W 30W	MS 20W 30W 30W	MS 20W 30W 30W	Tensions (F. Lb., Main Bearing Bolts Connecting Fool Bolts Connecting Fool Par Nuis Cylinder Head Bolts Maridol Was Screens Flysheel Cala Screens	95-105 45-50 757 75-85	45 50 45 50 75 75 75 85	45 50 22 28 75 85	120 130 45-50 110 23 78 75-86	150-164 150-164 3-4 130-150 23-28
ly, 1959	ABBREVIATIONS CW Clock wise Myd—Hydraulic lifters, 1—On 31 and 33 models only.	2 56A -3.94 x 3.6 3 56A - 140 (6 30) 4 56A - 50 (6 200) 5 56A - 6BTDC.	3.62 b & s, 354 disp. 3000. 2000. 0C.	ď	ABBREVIATIONS  1 477 4.8 x 3.75 b. & x, 477 disp.; 534 4.5  x 4.2 b. & x, 534 liqs.	2 Two rods, 3 Compression r 4 Two barrel grannetor,	2—Two reds. 3—Compression rings only; oil ring, .015 .062, 4—Two barrel ord/arcter only; four barrel car/arrelor, 318-2300.	67 gp (m	HD272—263 @ 2500. HD272—8.00 HD272—85.	.000

### General Motors, P&H-ENGINE SERVICE DATA

U	2
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F	4
C	)
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F	1
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FPAT	G
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Z	4
NAU	1
C	)

GENERAL	AL		IC	MOTORS	70		P & H			
Engine Model	51's	71's	71T's	71E's, V71's	53's	110, 110T	Engine Model	387 C-18, 387 C-18T	487 C-18, 487 C-18T	687 C-18, 687 C-18T
Number of Cylinders.	*	2, 3, 4 or 6	4 or 6	6, 8 or 12	2, 3, 4 or 6	9	Number of Cylinders	6	-	9
Bore (In.)	4,1000	4,2500	4.2500	4,2500	3.8750	9.0000	Bore (In.)	4.50	4.50	4.50
Stroke In.	4.1000	8.0000	5.0000	5.0000	4.5000	5.6000	Stroke (In.)	5.50	5.50	5.50
Piston Displacement Cu. In.	216.5			.,	*******	0.098	Displacement Cu. In.	261.0	348.0	562.0
Oil Pressure at RPM	45 2200	90-1800	50-1800	50 1800	45-2000	50-1800	Compression Ratio		*********	16.00
Minimum Idle Speed RPM		900	900	900	900	900	Firing Order	1-3-2	1-3-2-4	1-6-2-4-3-5
							Oil Pressure at 1806 RPM	55 100	58 100	98 100
Valves Valve Seat Angle (Deg.) Intake Exhaust	None	None 30	None 30	None 30	None 30	None 30	Compression Pressure at 150-200 RPM.	**********		325 400
Valve Tappet Clearance (In.)* Intake Exhaust * Hot unless otherwise specified.	None	None .009	None .014	None .014	None .009	None .0093	Guide to Stem Clearance (In.) Spring Load Closed (Lb.) Spring Length (Gosed (In.) Clearance (In.)	.012 .014	.012014	.001003 105 2.375 .012014
Cylinder Max. Allowable Taper In.) Max. Allowable Out of Round In.)	.002	.002	.003	.002		.002	Timing Injection Pump Bendix Rossa		::	25 BTC 16 BTC
Beton Chief Chaptere In	0037 0074	0040 0078	0000 0078	0040-0078	0062 0083	DOMA. DOMP?	Opens Closes Coses			48½ 8BC 48½ 8BC
PISION SARIT VICERATION III.	, 9651 . Util		. Moov . were	. Dave . sure	, Mara , Mine	. Ulbur . uner	Extrausit Valve Opports Closes Life at Pulse Rod Life to Extract Value			861/4 ABC 571/4 ABC 881/4 ATC
Ring Gap Clearance, No. 1 fm. Ring Gap Clearance, No. 2 In. Ring Gap Clearance, No. 3 In. Ring Gap Clearance, No. 4 In.	.025 .040 .025 .040 .025 .040	.018 .043 .018 .043 .018 .043	.008043 .008043 .008043	.018 .043 .018 .043 .018 .043	.020 .046 .020 .046 .020 .046	. 038 . 060 . 038 . 060 . 038 . 060 . 038 . 060	Crankshaff and Bearings End Thrust In.	910. 900.	.006016	.006016
Ring Side Clearance, No. 2 (In.) Ring Side Clearance, No. 2 (In.) Ring Side Clearance, No. 3 (In.) Ring Side Clearance, No. 4 (In.)	.00550125 .00750105 .00550065	.0100 .0125 .0080 .0105 .0060 .0085 .0060 .0085	.0100 .0125 .0080 .0106 .0060 .0085	.00400070 .00950130 .00750110 .00560090	.0080 .0100 .0070 .0100 .0050 .0080	. 0040 - 0070 . 0085 - 0110 . 0050 - 0090	Main Bearing Oil Clearance (In.) Connecting Red Bearing Oil Clearance Connecting Red End Play (In.) Connecting Red Bushing to Pin Clearance			.00200048 .00200035 .012033
Crankshaft End Play (In.) Main Beering Journal Diam. (In.) Connecting Red Journal Diam. (In.)		3,4990-3,5000 2,7490-2,7500	3.4990-3.5000 2.7490-2.7500	.004011 4.50001 3.00002	.004011 3.0000 3.5000	4.00004	Pistons and Rings Piston Size (In.) Too Beldon Compression Piston to Head Compression			4,478-4,477
Tensions (Ft. Lbs.) Connecting Bearings. Cylinder Head Studs.		65-75 155-185 180-190	65.78 155.185 180.190	66-75 180-190 180-190	45.50 120.130 170.180	66.75 180.215 150.160	Clearance Compression Ring Gap Oil Ring Gao Ring Axial Courance (Compression) Ring Axial Compression (Oil:	.023 .028	.023 .028	. 012 - 630 . 023 - 028 . 016 - 028 . 0020 - 0075
Flywheel Bolts Manifold Studs		30 36	150 160 30 35	150-160 30-35	130 140 30 35	150-160 35-40	Torque Values (Ft. Lb.) Flywheel Main Resine Can	98	900	901
Lubrication Minus 10 Degrees Plus 10 Degrees		10W 20W	10W 20W	10W 20W	10W 20W	10W 20W	Cylinder Head Studs Connecting Red Nuts Exhaust Manifold	88 84 00 00	80 100 45	900 900 900 900 900 900 900 900 900 900
Plus 92 Degrees Plus 90 Degrees		22	22	88	88	88	Capacities (Qt.) Crankcase Radiator	11.5	13.6	32

ABBREVIATIONS 1-3.4990-3.5000 for 71E's.

2 - 2.7490 - 2.7500 for 71E's. 3 - 014 for 110T. 4 - 3.2500 for 110T.

ABBREVIATIONS REFERENCES

BTC - Before top center.

## \* CATERPILLAR

D375 = 8 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	D353* 6 1473 1473 30 30 30 30 30 30 30 30 30 30 30 30 30	6.4 6.4 5.4 6.9 6.2 6.4 6.2 6.4 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2	6 6 6 6 6 6 6 7 7 8 8 7 8 8 7 8 8 8 8 8	D353*         D342*         D339         D337           6.4         5.4         5.4         5.4         5.4           6.4         5.4         5.4         5.4         5.4           8.2         1.246         8.31         80.5         5.6           9.0         45         45         3.0         6.4           9.0         45         45         3.0         6.4           9.0         45         45         3.0         6.4           9.0         45         45         3.0         6.5           9.0         45         45         3.0         6.5           9.0         45         45         3.0         6.5           9.0         45         45         3.0         3.0           9.0         45         45         3.0         3.0           9.0         45         45         3.0         3.0           9.0         10.0         10.0         10.0         10.0           9.0         10.0         10.0         10.0         10.0           9.0         10.0         10.0         10.0         10.0           9.0         10.0         10.0	6 6 6 6 6 6 6 6 7 7 8 7 8 8 8 8 8 8 8 8	D353*         D342*         D339         D337         D326         D318           6.4         5.4         5.4         5.4         6.4         4.5         6.4         4.5         6.4         6.2         6	Engine Model D397*  Number of Cylinders 12 Stroke (In.) 64 Piston Displacement (Cu. In.) 2483	Valves Seat Angle (Deg.) Seat Angle (Deg.) Traine Tappet Oleanne (Hot) (In.) Tappet Oleanne (Hot) (In.) Table Table Exhust	Ring Gap Clearance No. 1 (In.)	Ring Side Clearance No. 1 (In.)	Crankehaff End Play (In.) 5.4995 Cannecting Red Journal Diameter (In.) 5.4995 Cannecting Red Journal Diameter (In.) 4.6245	Tensions (Ft. Lbs.) Connecting Red Bearings. 150 Chin Bearing. 245 Plan Bearing. 260
	6 (4 (4 (2) (4 (4) (4) (4) (4) (4) (4) (4) (4) (4)	0.353 * D.342 * C.353 * D.342 * C.353 * C.353 * C.354 * C.355		D342"  6 51/4 6  1246  45 45  45 45  46 45  47 48  6 0022  6 0022  6 0038  6 0038  7 7485  3 7485  3 7485  3 7485  3	0.342** D339  6.54 5.44  8.54 5.44  8.54 6.54  8.54 6.54  8.54 6.54  8.54 6.54  8.55 6.55  8.55 6.5	6 5 4 6 5 7 6 5 7 6 6 7 6 7 6 7 6 7 6 7 6 7 6	## Box   Box	D375*	45 45 016 016	. 0195 . 022 . 020	.0038 .0038 .0023	. 0155 5, 4995 4, 6245	150

## HERCULES, Gasoline

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Piston Ring Gap		110	0.00 - 0.	
Valve Spring Pressure	(Length)	Outer	95-1 406 95-1 406 95-1 406 96-1 4	
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	ENCINE	MODEL	DIXAB DIXAB DIXAD DIXAD DIXAD DIXAD DIXAB	ABBREVIATIONS

### **ENGINE SERVICE DATA - International Harvester**

INTERNATIONAL		HARVESTER,	Gasoline	line	S. E.	Service data is not yet available on International's newest engines. It will be published in this section when released	not yet availal be published i	ole on Internal	ional's newest when released
Engine Model	UC-60	U-123	U-220	U-264-6	U-308	U-372	UV-401	N-450	UV-461
Number of Cylinders	-	*	9	100	ф	90	60	*	60
Bore (In.)	2.6250	3.1250	3.5625	3.6875	3.8125	4.3750	4.1250	4.3750	4.1250
Stroke (In.)	2.7500	4.0000	3.687.5	4.1250	4.5000	4.1250	3.7500	9.0000	4.3125
Displacement (Cu. In.)	89.8	122.7	220.8	264.0	308.2	372.1	401.0	451.0	461.0
Governed Speed at Full Load (RPM)	2500	2000	1800	2400	2400	1800	2800	1800	2800
Compression Ratio	7.00	6.80	7.10	7.90	6.57	6.50	7.69	6.30	7.20
Compression Pressure at 1000 RPM	165	166	4.11414	165	********	*******	200		150
Grankshaft Maximum Main Boaring Clearance (In.) Maximum End Clearance (In.)	.0034	.0039	.010	.008	.0043	.0043	.0044	.0043	.009
Connecting Rods Side Clearance (In.) Maximum Bearing Running Clearance (In.)	.005012	.005 .014	.0032	.007.014	.0032	.007013	.010 .018	.007 .013	.010 .018
Pistons Register of Control (In.) Top Compression (In.) Tolid Compression (In.) Third Compression (In.) Oil Control (In.)	.00200035	.0030 -0045 .00150030 .00150030	.0025 .0040 .0015 .0020 .0020 .0040	.0038 .0050 .0020 .0036 .0020 .0035	. 0028	. 0040 . 0056 . 0020 . 0035 . 0020 . 0035 . 0015 . 0035	. 0035 . 0080 . 0035 . 0080 . 001 . 003	.0040 .0055 .0020 .0035 .0020 .0035	.0035 .0050 .0035 .0050
Piston Rings Ring Gap Congression Top (In.) Top (In.) Third (In.) Maximum Ring Gap (In.) Maximum Ring Gap (In.)	.007 .017 .017 .017 .017 .015 .015	.010 .020	.016 .026 .016 .026 .0026	. 013 . 023 . 013 . 023 . 023 . 023 . 023	920	.028 .038 .025 .035 .035 .035 .038	.013 .026	. 026 - 035 . 025 - 035 . 025 - 035 . 035	.013 .025
Intake Valvee Starn Clearance in Guide (In.) Maximum Stem Chearance in Guide (In.) Valve Face Angle (Deg.) Valve Seat Angle (Deg.) Valve Seat Angle (Deg.)	.001003 .003 45 45	. 0015 . 0035 . 0035 45	.00150040 .0040 30	.002 .004	.00150035	. 0015 . 0040 . 0040 15	.0015 .0040 .0010 45 45	.00150040 .0040 15	. 0015 . 0040 45 45
Hot (In.) Cold (In.)	010	910	.033	010.	.020 .022	.018 .023	Hydraulic	.018020	Mydraulic
Sylves Same Clearace in Guide (In.) Maximum Stem Clearace in Guide (In.) Valve Face Angle (Deg.) Tappet Clearance Tappet Clearance Toold (In.)	. 0005 . 0035 45 45	. 0015 . 003 . 0035 45 45 45 . 014	. 0720 . 0045 . 0045 30 30 . 025 . 033	. 272 014 33	.002 .004	. 0020 . 0045 . 0015 44 45 . 018 . 020	.0025 .0050 .005 45 45 Hydraulic	. 00200045 . 0048 44 45 . 018020	. 0325 . 0050 . 003 45 45 45 Hydraulic
Intake Valve Opens-Deg. Before TDC	30	15	10	10	12	16	22	36	22
Crankcase Refill Capacity (Qts.)	m	10	60	80	7	ø	10	6	10
Nut and Bolt Terque Data (Ft. Lb.) Cylinder Head Stud Nuts. Connecting Not Nuts or Cap Screws Main Bearing Stud Nuts. Flywheel Bolts. Manifold Stud Nuts.	45.50 26.20 26.50 20.25 20.25	70 75 40 45 75 80 65 68 50 55	88-98 45-55 75-85 55-30	110 115 55 60 100 105 65 68 90 55	100-110 60-70 90-100 25-30	190-110 78-85 190-110 150-160 25-30	80 90 85.70 10.5 110 90 100	100-110 75-85 100-110 150-160 25-30	80-90 65-70 100-110 80-100

### International Harvester - ENGINE SERVICE DATA

INTERNATIONAL HARVESTER, Gasoline and Diesel	HARV	ESTER,	Gasoline	and Die	sel			
Engine Model	U-501	UV-549	U-1091	UD-350	UD-14A	UD-525	UD-18A	UD-1091
Number of Cylinders	10	60	9	4	4	9	90	9
Bore (In.)	4.5000	4,5000	5.7500	4.5000	4.7500	4.5000	4.7500	5.7500
Stroke (In.)	5.2500	4.3125	7.0000	8.5000	8.5000	5.5000	6.5000	7,0000
Displacement Cu. In.)	901.0	548.7	1091.6	349.9	460.7	524.9	1.169	1090.6
Governed Speed at Full Load (RPM)	2600	2600	1400	1800	1400	1800	1600	1400
Compression Ratio	6.50	7.08	7.50	15.61	15.00	16.00	15.90	15.00
Compression Pressure at 1000 RPM.	********	140		503 557	513 567	503 - 557	513-567	484 536
Crankshaft Maximum Boaring Clearance (In.) Maximum Bearing Clearance (In.) Maximum End Clearance (In.)	0004	000	.0074	.004	.00%	000	,004	.004
Connecting Rods Side Clearance (In.) Maximum Bearing Running Clearance (In.)	.007 .013	.010018	.009015	210009.	.009.015	.009 .015	.009.015	810, -009, .018
Pistons Ring Clearance in Groove Top Compression In. Second Compression In. Third Compression In. Third Compression In. Old Compression In.	.0040 .0055	. 0038 0050 . 0038 0050 . 0038 0050	. 0130 . 0030 . 0043 . 0030 . 0045	. 0035 - 0050 . 0026 - 0040 . 0020 . 0035		. 0028 . 0050 . 0028 . 0040 . 0020 . 0035	. 0040 - 0055 . 0030 - 0050 . 0025 - 0045	
Piston Rings Ring Gap (Compression) Tep 4(n.) Second Third	.020 .030	.013 .025 .013 .025	030 040 DIESEL	8888	410.			.030 .046
Fourth (In.) Maximum Ring Gap (In.) Ring Gap (Dil) Maximum Ring Gap (In.)	.030			013	. 014 - 030 . 070 . 020 - 036 . 060		.070 .070 .020 .036	
Intake Valves. Stem Clearance in Guide (fn.) Waximum Stem Clearance in Guide (in.) Wave Stea Angle Deg., Valve Seat Angle Deg.	0015 .0040	. 0015 0040	. 002 004 . 004 45 45	. 002 . 004	. 002 004 . 008 45 45	. 002 004 . 008 45 45	. 002 . 004 . 008 45 45	.002 .004 .008 .008 45 45
Cold (In.)	.020 .022	Mydraulic	310°.	010	.020	.019	.020	.023
Exhaust Valves Stein Clearance in Guide (In.) Maximum Stem Clearance in Guide (In.) Valve Face Angle Deg. Tancot Clearance	.0020 .0045	. 00250050 . 005 45	.002004 .004 45 45	. 002 004 . 008 45	. 003 . 005 . 008 45	. 002 004 . 008 45	. 003 006 . 008 45	. 003 . 005 . 008 45 45
registration of the Cold (In.)	.020 .022	Mydraulic	.019	019	.026	010	.020	.023
Intake Valve Opens-Deg. Before TDC	96	22	20	10	20	28	50	28
Crankcase Refill Capacity (Qts.)		10	30	11	16	18	8	30
Nut and Bolt Torque Data Ft. Lb. Cylinder Peda Stud Nuts Connecting Red Nuts or Cap Screws Main Bearing Stud Nuts	75.85	68 75 80 75 80	250-270	145 165	215.235	145-165 55-80	215 235 70 75	290.310 70.75
inch inch inch	000 000	100-110	250 275	250 275	250 275	110-135	250 275	250 275
Flywheel Botts Manifold Sub Nuts Front Pulley Nut to Crankshaft Camshaft Gear Nat	25-30	90-100	150 155 75 80	85-68 75-80 325-375 225-250	150-155 75-80 325-375 225-250	110 135 75 80 325 375 275 mm	150-155 75-80 328-375 225-250	150 155 75 80 328 375 275 300

REFERENCES 1-195GKA, 125-3000. 2-195GKA, 288-1600.	3-195GKA, 135GKB, GZB, 3000. 4-195GKA, .014-016. 6-195GKA, .019024.	7 1905-KA, 0015-200. 7 1905-KA, 0015-200. 1905-KA, 0005-0000. 1905-KB, 148-9000. 17-135-KB, 148-9000. 14-135-KB, 158-200. 14-135-KB, 158-200.	18—140(7KB, 426-500, 140(3)KB for fire 18—140(7KB, 426-500, 140(3)KB for fire 18—140(7KB, 42KB, 3200, 18—140(7KB, 42KB, 3200, 18—140(7KB, 188-2600); 140(3)KB for fire 18—140(2KB, 188-2600); 140(3)KB for fire 18—140(2KB, 160, 160, 160, 160, 160, 160, 160, 160	20—1450°IK for five apparatus and 1451°IKE, 249—240°I 145(2K) for 21—145(2K) for five apparatus, 590–5400. 22—145(2K) for five apparatus, 640– 24—145(2K) 2400.	28. 1845 KB, 10045-10060, 28. 1845 KB, 10045-10060, 28. 1845 KB, 10015-10040, 28. 1845 KB, 285-260, 28. 1845 KB, 289-1800, 28. 6W AKB, 289-1800, 31. 1801 KB, 389-380, 31. 1801 KB, 389-380, 32. 1801 KB, 389-380,	23—185D.CA, 98-2800. 23—187D.CA, 98-2800. 23—197D.CS, 275-1800. 247-2500; 135D.KBS, 185-2800; 135D.KBS, 185-2800.	38 135DKBS, 400-1800. 2100. 2100. 40 148DKBS, 706-1800.	-148D/KB, DKBS, 1200.  42 -148D/KB, DKBS, 1298.  43 -WAKDB, 258-1800; WAKDBS, 400-1800.  44 -WAKDB, 845-1000; WAKDBS, 1400-1200.  45 -WAKDB, WAKDBS, 1800.		195 GK, 135 GK, GKA GKB	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	45 45 45 45 46 45 4015.0035 .0075.0045 .0075.0045 .0075.0045 .0075.0045 .0075.0045 .0075.0045
	WAKD, WAKDB, WAKDBS	6.250 6.250 1197.0 224 160043 840-100044 160045	30 45 .00150035 .00250045 .014**	.045 - 050 .035 - 040 .035 - 040 .027032	. 038 048 . 030 045 . 030 046 . 026 046 . 020 030	.00150035	.00200045	.040 .040 .00250060 .005013		195 GL	6 4.000 4.000 302.0 85.2400 240-1200 2400	46 45 .00150035 .00260045 .007009
	148 DK, DKB, DKBS	6.250 6.000 1972.000 197.200039 548.100040	45 45 .00150035 .00250045 .015	.0400 .0445 .0250 .0305 .0190 .0245	. 035 . 046 . 020 . 030 . 020 . 030 . 020 . 030 . 015 . 025 . 015 . 025	,0015 ,0035	,0015-,0040	.040 .040 .00200047 .005013		190 GLB	8.750 4.000 265.0 77-2200 223-1200 2400	45 45 .0015 .0035 .0025 .0045 .007 .009
	135 DK, DKB, DKBS	6 4.250 5.000 425.000 140.240037 328.160038 240038	45 45 .00150035 .00150045 .011	. 0300 - 0355 . 0300 - 0355 . 0190 - 0245 . 0190 - 0245	.015025 .015025	.0015 .0035	,0010-,0035 ,008-,014	.040 .040 .0015 .0045 .006 .014		185 GLB	6 3.500 3.750 216.0 67-2400 176-1400 2400	45 45 .0015 .0035 .0045 .009 .011
	197 DLC, DLCS	6 4,000 4,000 302,0 91_2800*4 216_1600*5 2800	45 45 .00150035 .00250045 .00901138	.0280 - 0328 .0230 - 0265 .0230 - 0265 .0230 - 0265	.015.028 .015.025 .016.025	.0005 .0028	,0005-,0030	.040 .040 .00150045 .00450085		ХАН	3.825 4.500 186.0 47.2000 131.1400 2200	45 45 .0015 .0035 .002 .004 .009 .011
	195 DLC, DLCA	6 4.000 302.0 96.24003 221-1800 240032	45 45 405-0035 0025-0045 010	.0290 .0325 .0230 .0265 .0230 .0265 .0230 .0265	.015 .025 .015 .025 .016 .025	.00100035	.00150030	.040 .040 .00150045	e	180 GKB	4 3.625 3.625 15.0 15.0 131 1400 2400	45 .0015 .0035 .0025 .0045 .009 .011
sel	190 DLC, DLCA	6 3.750 2.000 265.0 84.240031 191.1400 240032	45 46 .00150035 .00250045 .010	. 0290 - 0328 . 0230 - 0265 . 0230 - 0265 . 0230 - 0265	.015.025 .015.025 .015.025 .010.018	.001	,0005-,0030	.040 .040 .00150045	Gasoline	180 GLB	4 500 3.500 3.750 144.0 45.2400 118.1600 2400	45 45 .0015 .0035 .0025 .0045 .009 .011
Diese	185 DLC	6 3.500 23.750 216.0 60-2400 152-1000 2400	45 45 .00150035 .00250045 .010	. 0290 - 0325 . 0290 - 0325 . 0230 - 0265 . 0230 - 0265	.014 .024 .014 .024 .014 .024 .007 .017	.001	.0005 .0018 .0075 .0135	.040 .040 .00020027 .0045 .0085	Gas	FC	4 250 4 000 133.0 35.2400 87.1400 2600	45 45 .001 .003 .002 .004 .005 .007
HA		3,500 3,750 144,0 45,2400 102,1800 2400	45 45 .00150035 .00250045 .010	.0290 .0325 .0290 .0325 .0230 .0265 .0230 .0265	.014 .024 .014 .024 .014 .024 .007 .017	.001003	,0005-,0015	.040 .0002 .0027 .0045 .0085	IA.	ICK	4 500 3.125 61.0 18.2600 41.1800 3200	45 45 .001 .003 .002 .004 .007 .009
WAUKESH	Engine Model	Burenfor of Cylinders Bare (In) Displacement (Ou. In.) Displacement (Ou. In.) Maximum Torque at RPM Ft. Lb.) Maximum Permissiole Speed (RPM)	Valves Sant Angler (Intake) (Dog.) Sant Angler Enhants (Dog.) Sant Moderance in Cairles (Intake) (In.) Sant Dicarance in Cairles (Intake) (In.) Operating Disarance (Intake) (In.) (Dold Operating Disarance (Intake) (In.) (Dold	Pistons (Akuminum) Lind Clearance with Bore (In.) Second Thered Fourth Fourth Skirt Clearance (In.)	Rings Gap (In.) Top Second Second Fourth Fifth Fifth Sifth	Top Second Third Fourth Fifth Sixth	Rods and Bearings Connecting Rod Clearance (In.) Side Clearance (In.)		WAUKESHA	Engine Model	Number of Cylinders Stroke (In.) Displacemen (Cu. In.) Displacemen (Cu. In.) Maximum Torque at RPM (Ft. Lt.) Maximum Permissible Speed (RPM)	Valves Seat Angle (Exhaus) (Deg.) Seat Angle (Exhaus) (Deg.) Sean Character (Deg.) Sean Clearance in Guides (Intake) (In.) Stem Clearance in Guides (Exhaus) (In.) Operating Clearance (Intake) (In.) (Cold) Operating Clearance (Exhaus) (In.) (Cold)

### Roiline - ENGINE SERVICE DATA

. 0210 .0265 .0240 .0295 .0240 .0295 .0120 .0165 .0240 .0295 .0120 .0165 .0240 .0295 .0120 .0165 .0240 .0295 .0120 .0165 .0240 .0295 .0120 .0120 .0165 .0240 .0295 .0120 .0120 .0165 .0240 .0295 .0120 .0120 .0165 .0240 .0255 .0120 .0120 .0165 .0240 .0255 .0120 .0165 .0240 .0255 .0160 .0255 .0160 .0255 .0160 .0255 .0160 .0255 .0160 .0255 .0160 .0255 .0160 .0255 .0160 .0255 .0160 .0255 .0160 .0255 .004	. 010 - 015 . 010 - 020 . 010 - 020 . 007 - 017 . 010 - 020 . 015 - 023 . 010 . 010 . 020 . 010 . 020 . 010 . 020 . 010 . 020 . 010 . 020 . 010 . 020 . 010 . 020 . 010 . 020 . 010 . 020 . 010 . 020 . 010 . 020 . 010	. 0019 - 0030	2100 - 2000 . 2100 - 2000 . 2100 - 2000 . 2100 - 2000 . 2100 - 2000 . 2100 - 2000 . 2100 - 2000 . 2100 - 2000 . 2100 - 2000 . 2100 - 2100 . 21	\$ .040 .040 .040 .040 .040 .040 .040 .04	Gasoline ROIL 140 GK, 140 GZ, 145 GK, 145 GZ, 6 WAK, Engine Model	6 6 6 778 6 778 6 8 778 6 778 6 8 778 6 8 778 6 8 778 6 8 778 6 8 778 6 8 778 6 8 778 6 8 778 6 8 778 6 8 778 6 8 778 6 8 778 6 8 778 6 8 778 6 8 778 6 8 778 6 8 778 6 8 778 6 8 778 6 77	30 30 30 45 45 45 45 45 45 45 45 45 45 45 45 45	. 030 - 030		. 0029 0033 . 0029 0038 . 0030 00453 0045 0040 . 0030 0048 . Connecting Red Durnal Diameter (1n.) . 00115 0030 . 0031 0030 . 0033 00451 00451 0040 . 0030 00451 0040 . 00115 0030 . 00115	Number   Bearings   Number   Numbe	. 040 . 040
Land Glearance with Bore (In.)  Top Second Second . 0110 . 0115 . 0110 . 0118 Third00600085 Franth. Franth. Franth.	Rings (In.)   Gay (In.)   1007 - 015   100	Unyone Userances (III.)  Worker Committee (III.)  Second (1000- 00	Rods and Bearings (In.) 001 - 002 Commercing Mod Clearance (In.) 5160 Clearance (In.) 010 - 012	Mazimum Persission Unoversize Main Journals (In.) Connecting Red Journals (In.) Main Bearing Searing Searing Searing Searings Crankshaff End Play (In.)	WAUKESHA,	is report NA (Pr. L.b.) Nacon (RePM)	Valves Seat Angle (Intake) (Deg.) 45 Seat Angle (Exhaust) (Deg.) 46 Seat Angle (Exhaust) (Deg.) 46 Seat Clearance in Guides (Intake) (In.) 6015-0035 Stem Clearance in Guides (Exhaust (In.) 6005-0045 Operating Clearance (Intake) (In.) (Cold) 602-0045	Pistons (Abunihum) Land Cleurance with Bore (In.) 1059-0395 Second 10290-0395 Third 10290-0395 Fourth 10290-0395 Skirt Cleurance (In.)	Filings Gap (In.) Gap (In.) The Complete Complet	Groups Constitutes (III.)  Second Thirty Constitution (III.)  Figure Constitution (III.)  Fifth Constitution (III.)	Reds and Bearings Connecting Red Clearance (In.) Side Clearance (In.)	Main Journals (In.) Connecting Red Journals (In.) Opt

## **COMMINS**

		0	000	H, HS, NH-180,	NH-ZZO, NHS, NHRS, NT, NTO, NRT,	J, JF, JS,		9	NVH.
Engine Model	J-70, J-80	C-160, C-173	N-1180, N1-200	CRI-HN DOZ-	NAIC		,	LH, LH	71-17
Number of Cylinders	*	90		9	9	40	æ	9	12
Bore (In.)	4.125	4.438	5.125	4.875	5,125	4.125	7.000	7.250	5.125
Stroke (In.)	9.000	8.000	8.000	6.000	0.000	9.000	10.000	10.000	6.000
Pisten Displacement (Cu. In.)	267.0	464.0	495.0	672.0	743.0	401.0	2309.0	2477.0	1466.0
Developed Horsepower at RPM	70-200022	160-250023	180 210024	160-16001	174 18005	100-180011	265-1000	320-110019	424 210013
Maximum Torque at RPM (Ft. Lb.).			*********	51213	55015	30516	1650	176020	119021
Lubricating Oil Pressure (Lb.) Idling to Governed Speed Normal at Governed Speed	35 55	55.5	85 85 85	5. 55 30. 50	5.55 30.50	15.56 30.50	20 40-60	20 40 60	30-60
Minimum Idle Speed (RPM)	900	900	900	900	200	900	900	900	800
Valves Valve Seat Angle (Intake) (Deg.) Valve Seat Angle Exhaust) (Deg.) Valve Clearance (Intake) (In.) Valve Clearance Exhaust (In.)	30 30 .015	30 30 .015	30 30 .014 .027	30 30 . 014 <sup>2</sup> . 027 <sup>3</sup>	30 30 .0146 .0277	30 30 .015	30 30 .014 .018	30 30 .014	30 30 .014
Valve Springs - Load to Compress (Lb.) Intake and Exhaust Closed Intake and Exhaust Open.			* * * * * * * * * * * * * * * * * * * *	110 122 (a 21) 179 198 (a 21)	110-1228 (# 24) 179-1989 (# 24)	44 (a 2.016	99-121 226-250	99-121 226-250	74-82
Cylinder Liners Maximum Allowable Out of Round (In.).	100.	100.	.001	.001	.001	.001			100.
Pistons and Rings Ring Grower Celerance (In.) Piston Skirt Diameter (In.) Ring Gap Clearance (In.)	4,1200	4.4300	5,1200	4,8656	5,1200	4,120	. 0010 . 0040 6. 990-6. 981 . 015 . 012	.00100040 7.238-7.240 .015025	5.115
Crankchaft End Play (In.) Main Searing Journal Diameter (In.) Connecting Rod Journal Diameter (In.)	.004011 3.874 3.875 2.824 2.828	.004 .011 3.874 3.875 2.624 2.625	.007 .013 4.499 4.500 3.124-3.125	. 007	.007013 4.489.4.500 3.124.3.125	. 004009 3.874-3.875 2.624-2.625	. 006 016 5. 489 5. 500 4. 249 - 4. 250	. 008 - 016 5,496 -5,500 4-249 -4,250	.006013 4.899.5.000 3.749.3.750
Connecting Rods Clearance - Rod to Rod (In.)									.006013
Tensions (Ft. Lb.) Studis Cylinder Head Studis Enhaust Marifold Studis Injector Mounting Japscrews Injector Adjustment	380-400	380 400	430-450	430 450 4014 10 12 6	430 430 4017 10 12 6	380,40017 2218 10-12 5	550 650 60 15 20	550 650 60 115-20	450 60 10 12 8
Capacities (Qt.) Grankcase Gooling System	10-13	12-16	14 20	14.36	16.2010	12.16	72	180	34-180
ABBREVIATIONS  1 - H8,210, NH-180, 180-2100, NH-195, 195, 6 - HRN 8 - HRN modt, 5016, 7 - HRN, 7 - HRN, 7 - HRN, 8 - HR modt, 5010, 602, 8 - NH, N - HR, 240; NH-220, 220; NHS, 290; 8 - NH, N	NHRS, 320; NT, 250; NTO, 263; NRT, 360; NRTO, 385; NFT, 375. HRS, 402; AHRS, 403; * NH, NHS, NHRS, 74 82. * NH, NHS, NHRS, 104-114.		10 NH, NHS, NHRS, 20-34, 11 JF, 11 JF, 11 JF, 12 JF, 130; JN, 130; JN, 175, Ta, VT, 175, 600, 12 HS, 673, 14 HS, 6	12	18—HRS, 753; NH-220, 606; NHS, 77 NHRS, 865; NT; 695; NTO, 68 NHT, 810; NRTO, 900; 18—JF, 206; JS, 375; JN, 296; JNS, 41 JT, 407.	220, 606; NHS, 775; NT, 695; NTO, 695; TO, 900; S; JN, 295; JNS, 407;	18 - 3, Studs, 25, 19 - 1, RT, 450, 20 - 1, RT, 2260, 21 - VT-12, 1700,		22 J-80, 80-2500. 23 - (-,175, 175-2500. 24 - NT-200, 200-2100.

Engine and Construction Equipment Selection Specifications begin here

### GASOLINE ENGINES For addresses of manufacturers, see page C1

			MAXII BRAKI	Hp.	(lu						1	VALVE	S			ston		CRANKS	HAFT	RET	
FACING		n.)	at Specifie	d R.P.M.	nt (Cu.		e at with or	Type			ft	Dian	em neter			per Pisi	B	AAIN BEA	RINGS		T
ENGINE MAKE AND		of Cylinders d Stroke (In.)	Engine	p.	Displacement	, Ratio	Im Torque (Lb. Ft.) w Accessorie	Liners	-	-(1)	n.)	(0)	n.)	-	ats	Rings p		Diame: Lengt	ter and		
MODEL		Number of Bore and Sh	With Bare E	With Standard Accessories	Piston Displ	Compression	Maximum T R.P.M. (Lb. without Acc	Cylinder Lin	Arrangement	intake	Exhaust	Intake	Exhaust	Angle (Deg.	Inserts Used?	Number of	Number	Front	Rear	Make	Blass
illis-Chalmers	B-125 4B-153 6B-230 G-149 G-226 G-262	4-33 8x31 2 4-3 6x41 6 6-3 6x41 6 4-33 8x31 2 4-4x41 2 6-3 6x42 8	30-1900 47-2400 73-2400 86-2200	28.3-1900 37-2000 57-2000 40-1325 63-1225	125.2 153.0 230.0 149.0 226.0 262.0	6.00 6.00 7.50 7.25	112-1500 (BE) 168-1000 (BE) 129-1300 (BE) 211-1100 (BE)	w w w		.360 .429 .429 .360 .360 .429	.360 .429 .429 .360 .360 .429	.341 .312 .312 .341 .371 .310	.341 .312 .312 .341 .371 .310	45 45 45 45 (h) 45	N N N E E	4 4 4 4 5	3 7 3 7	2.25x1.62 2.50x1.25 2.50x1.25 2.75x1.25 3.00x1.25 2.50x1.25	2.50x1.75 2.50x1.75 2.75x1.50 3.00x1.25	Zen MaS Zen	1 1 1 1 1
hrysler	Ind. 30 Ind. 32 Ind. 54 Ind. 56A	6 314x456 6 314x434 8 356x321 8 314x356	99 3800 120 3800 173 4000 188 4000	66 - 2400 79 - 2400 114 - 2800 135 - 2800	230.0 265.0 315.0 354.0	6.80	225-1200 (BE) 265-2500 (BE)	N N N	1	.379 .379 .368 .381	.379 .379 .375 .357	.340 .341 .372 .372	.340 .340 .433 .372	45 45 45 45	EEE	4 4 3 3	4 4 5 5			Str	1
continental	N-4062 N-56 N-62 Y-89 Y-4069 Y-91 Y-4091 E-201 F-244 J-382 Y-112 F-124 F-4124	4 25 6 x 3 1 2 4 2 1 x 3 3 2 4 2 1 x 3 3 2 4 2 1 x 3 3 2 4 2 7 6 x 3 1 2 4 2 7 6 x 3 1 x 4 7 6 4 3 1 x 4 3 4 4 4 1 x 6 4 3 1 x 3 1 4 3 x 4 3 4 4 3 x 4 3 4 4 3 x 4 3 4 3 x 4 3 6 4 3 x 4 3 6 4 3 x 4 3 6 4 3 x 4 3 6 4 3 x 4 3 6 4 3 x 4 3 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	26.3 3500 14.2 2200 15.2200 21.4 2400 28.3 3400 28.5 2400 36.5 2400 74.2 1400 32.2400 47.3200		62.0 69.0 69.0 91.0 201.0 244.0 382.0 112.0 124.0	6.80 6.46 6.60 6.30 6.30 5.82 6.80 6.30	51-2000 (BE) 67-1600 (BE) 70-1500 (BE) 171-1200 (BE) 192-1200 (BE) 283-1000 (BE) 82-1200 (BE) 91-1200 (BE) 94-1500 (BE)	N		.187 .296 .296 .296 .296 .230 .329 .249 .296 .281 .281	.187 .281 .281 .281 .281 .230 .334 .249 .281 .281	.314 .315 .314 .314 .314 .314 .341 .341 .435 .314 .341	.312 .313 .312 .313 .313 .313 .339 .339 .433 .313 .334 .336	(h)	E Op Op Op Op E E E Op Op	3 3 3 3 3 4 4 4 3 4 4	3 3 3 3 4 4 3 3 3 3	3.50x1.88 1.75x1.28 2.25x1.18	1.75x1.78 1.75x1.78 1.75x1.78 1.75x1.78 2.81x1.56 2.56x1.48	Ор Ор Ор Ор Ор Ор Ор	00000
	FU-6221	6 41, x53, 6 42, x53, 6 43, x53, 6 43, x53, 6 43, x53, 6 53, x53, 6 53, x43, 6 53, x43, 6 43, x43, 1 8 43, x44, 1 8 6 6 43, x44, 1 8 6 6 63, x44, 1 8 6 63, x44, 1 8 6 6 63	62 - 1800 60 - 5 - 2400 77 - 3500 60 - 5 - 2400 90 - 3500 97 - 3600 97 - 3000 97 - 3000 97 - 3000 106 - 3000 110 - 2400 1		140.0.1 157.0 157.	6.40 5.65 5.65 6.77	106-1200   BE   124-1200   BE   126-1200   BE   147-1200   BE   147-1200   BE   148-1200   B	NON		343 343 359 4600 4604 4604 359 460 5005 5005 5005 5005 5005 5005 5005	359 406 374 374 300 500 500 500 500 500 500 500 500 500	. 403 404 404 404 404 405 435 435 437 437 437 437 437 437 437 437 437 437	432 432 432 432 432 437 432 432 432 432 432 432 432 432 432 432	(h)			77777777777777777777777777777777777777	2.25x1.52 2.25x1.53 2.25x1	2.25x1.89 2.87x2.08 2.87x2.08 2.87x2.08 2.87x2.08 2.87x2.08 2.87x2.08 2.25x1.81 2.25x2.18 2.87x2.71 2.87x2.71 2.87x2.71 2.87x2.71 2.87x2.71 2.87x2.72 2.87x2.73 2.87x2	Op O	000000000000000000000000000000000000000
Ford	EA)	4 3 9 x 3 9	54.8-220 6 61-280 7 48.5-280 107-280 132-280 168-280 187-280	0 48 220 0 0 0 0 0 0 0 170 280	0 172 172 134 223 272 332 10 401	0 6. 0 7. 0 7. 0 8. 0 8. 0 7. 0 7.	80 110-1450 (9) 75 149-1300 (8) 50 147-1400 (8) 50 10-1400 (8) 30 203-2000 (8) 30 250-2400 (8) 50 350-2000 (8) 50 430-2000 (8) 50 430-2000 (8)	E) DE) DE) NE) NE) NE)		1 .35 1 .35 1 .36 1 .40 1 .34 1 .41	5 .33 5 .33 5 .33 9 .36 0 .42 6 .37 4 .41 4 .41	7 .34 17 .34 17 .34 18 .34 10 .34 14 .43 14 .43	2 .34 3 .34 3 .34 2 .34 2 .34 2 .43 15 .43	1 4! 2 4! 2 4! 1 4: 1 4: 5 4: 5 4:	5 E E E E E E E E E E E E E E E E E E E	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	4	2.50x1. 2.50x1. 2.50x1. 2.50x1. 2.50x.9 2.50x.7 3.13x1. 3.13x1.	50 2.50x1.6 50 2.50x1.1 17 2.50x1.3 30 2.50x1.9 23 2.50x.7 23 2.62x.7 10 3.13x1.1 10 3.13x1.	15 Mas 22 Mas 34 Mas 23 Hol 28 Hol 23 Hol 10 Hol 10 Hol	S S S

Continued on next page. For references and abbreviations, see page C17

### **ENGINE SPECIFICATIONS**

### GASOLINE

		MAXII BRAKI	E Hp.	ln.)						1	ALVE	S			u		CRANKS	HAFT	CARE	
*****	£2	at Specifie	d R.P.M.	Cu.		at ith or	Type			ift	Dian				per Piston	N	MAIN BEA	RINGS		
ENGINE MAKE AND MODEL	of Cylinders, I Stroke (In.)	Engine	pue	splacement	n Ratio	FL. w	Liners	*	(1)	n.)	(B)	n.)	-	ats	Rings p		Diamet Lengti			
MODEL	Number of Bore and Si	With Bare I	With Standard Accessories	Piston Disp	Compression	Maximum Torque at R.P.M. (Lb. FL) with without Accessories	Cylinder Lin	Arrangement	Intake	Exhaust	Intake	Exhaust	Angle (Deg.	Inserts Used?	Number of	Number	Front	Rear	Make	Size
Example   Exam	4 25 x 3 4 3 x 4 4 4 3 x 4 4 4 3 x 4 4 6 3 x 4 4 6 3 x 4 4 6 3 x 4 4 6 4 x 4 1 6 4 x 4 1 6 4 x 4 1 6 4 x 4 1 6 5 x 4 4 6 3 x 4 4 6 x 4 6 6 x 6 x 6 x 6 x 6 x 6 x 6 x 6 x 6 x 6	87-3200 92-3200 103-3200 115-3200 113-3200 131-3200 131-3200 139-2600 143-2400 227-2000	87.5-3200 104-3200 98-3000 111-3200 118-3200 118-2600 121-2400 193-2000 40.5-2400	141.0 198.0 226.0 236.7 282.0 298.0 320.0 339.0 339.0 404.0 529.0 935.0 149.0	6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50	97-1800 (BE) 159-1400 (BE) 182-1400 (BE) 190-1400 (BE) 240-1400 (BE) 240-1200 (BE) 272-1400 (BE) 272-1400 (BE) 372-1300 (BE) 372-1100 (BE) 750-900 (BE)	NNNONNONN NNNN	444-44-44-44	.200 .250 .250 .369 .311 .356 .369 .356 .389 .388 .468 .369 .389	.200 .250 .250 .369 .369 .356 .356 .356 .369 .388 .468 .369 .369	.248 .310 .310 .375 .375 .375 .373 .373 .373 .373 .373	.248 .310 .310 .375 .375 .373 .373 .373 .373 .373 .373	30 30 30 45 45 30 45 45 30 45 30 45 30 45 30	Op Op Op N N Op Op Op Op Op Op	3 3 3 4 4 3 4 4 5 4 3 3 3	333557777777744	2.00x1.56 2.00x1.56 2.50x1.16 2.50x1.31 2.50x1.31 2.50x1.31 2.50x1.31 2.50x1.31 2.50x1.31 2.50x1.31 2.50x1.31 2.50x1.31 2.50x1.31 2.50x1.31 2.50x1.31	2.00x1.37 2.00x1.62 2.00x1.62 2.50x1.16 2.50x1.16 2.50x1.16 2.50x2.12 2.50x2.12 2.50x2.12 2.50x2.12 2.50x1.16 2.62x2.75 3.00x2.93 3.50x3.50 2.50x1.16	Op Op Op Op Op Op Op Op Op Op Op Op	Op Op Op Op 11, 11, 13, 13, 13, 21
lerzules-Hall-Scott 2269-O 590-GV-3, 590-GV-4 590-GV-1 590-GH-1 590-BH-1 590-0 6182-G2 6182-B1	12 5% x7 6 5x5 6 5x5 6 5x5 6 5x5 6 5x5 6 5x5 6 5x5 6 5x5	575-2100 242-2800 255-2800 242-2800 255-2800 240-2800 320-2300 368-2300	205 2800 217 2800 205 2800 217 2800 204 2800 275 2300	590.0 590.0 590.0 590.0 1091.0	6.60 9.00 6.60 9.90 8.70 6.50	492-1600 (BE) 530-1600 (BE)	222222	-	.482 .500 .500 .500 .500 .500 .547 .547	.482 .500 .500 .500 .500 .500 .547 .547	.497 .496 .496 .496 .496 .497 .496	.528 .496 .496 .496 .496 .496 .527 .527	30 45 45 45 45 45 (h)		6 3 3 3 3 4 4	7 7 7 7 7 7 7 7 7	3.24x1.67 3.24x1.67 3.24x1.67 3.24x1.67 3.25x1.67 3.50x2.10	3.25x2.09 3.25x2.38 3.25x2.38 3.25x2.38 3.25x2.38 3.25x2.38 3.50x3.05 3.50x3.05	Cen Hol Cg Alg Hol	21 11 21 21 21 21
nternational UC-60 U-123 U-224-6 U-364-6 U-372 U-480 U-1081 U-1081 U-401 U-461 U-461 U-462 U-4546 U-2546 U-2546 U-262	4 25 x 23 4 6 3 1 x 4 6 3 1 x 4 6 3 1 x 4 6 6 3 1 x 4 6 6 4 5 x 7 6 4 1 x 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	42-2000 72-2400 83-2400 92-2400 110-2200	68-2400 78-2400 87.5-2400 104-2200 126-2200 200-1600 131-2200 160-2800 170-2600 208-2600 58-1800	135.0 220.5 264.0 308.0 372.1 450.9 1090.6 501.0 401.0 461.0 549.0 221.0	7.30 6.50 7.00 6.50 6.50 6.50 7.50 6.50 7.69 7.20 7.00	198-1400 (BE) 230-1200 (BE) 288-1200 (BE) 348-1350 (BE) 338-1350 (BE) 394-1200 (BE) 350-1900 (BE) 378-1900 (BE) 490-1800 (BE)		1	.222 .261 .397 .240 .406 .449 .625 .450 Hyd Hyd Hyd	.222 .261 .397 .240 .406 .449 .625 .450 Hyd Hyd Hyd	. 310 . 341 . 372 . 372 . 372 . 434 . 434 . 495 . 435 . 435 . 435	.310 .341 .370 .372 .372 .434 .434 .434 .434 .434 .434	45 45 30 45 30 44 44 45 45 45 45 45 45	NNEERENWEEEE	33334445333433	3 3 4 4 7 7 7 7 5 5 5 4 4	2.13x1.59 2.75x1.69 2.75x1.30 2.70x1.13 3.25x1.66 3.25x1.81 4.13x1.75 3.25x1.34 3.13x.969 3.13x.969 2.75x1.21	1.62x1.34 2.13x1.85 2.75x2.17 2.75x1.89 2.70x1.94 3.25x2.37 3.25x2.37 4.13x1.75 3.25x1.84 3.13x.969 3.13x.969 2.75x1.81	C-Z Zen Zen Zen Zen Zen Zen Ens Zen Hol- Hol:	3 7 11 11 11 11 11 11 11 11 11
linneapolis-Moline 185A 206H V206B 283B 283E 403C 425A 605A 8600 12100 12100	4 35 x4 4 35 x5 4 41 x5 4 41 x5 4 45 x6 6 41 x5 6 45 x6 12 45 x6 12 5 x6	42 - 1600 51 - 1550 48 - 1550 59 - 1300 67 - 1500 80 - 1300 105 - 1200 149 - 1300 200 - 1200 291 - 1300	45-1550 45-1550 57-1300 61-1500 75-1300 78-1400 99-1209 142-1300 180-1200	206.5 206.5 283.7 283.7 403.2 425.5 605.0 800.0	7.30 6.35 6.85 5.90 6.85 5.90 5.26	175-1300 (BE) 168-1100 (BE) 240-1200 (BE) 244-1300 (BE)	******		.469 .469 .494 .494 .494 .494 .494 .494	.470 .470 .470 .495 .495 .495 .495 .495 .495 .495	.341 .341 .341 .434 .434 .434 .434 .434	.341 .341 .341 .434 .434 .434 .434 .434	45 45 45 45 45 45 45 45 45 45 45		4 4 4 4 4 4 4 4	3 3 2 3 3 3 4 4 4 4 4	2.75x1.75 RB 2.91x2.68 2.91x2.68 2.91x2.68 2.91x2.68 2.91x2.68 3.49x2.53 2.91x2.68	3.00x2.18 3.00x2.18 Ba 2.91x3.50 2.91x3.50 2.91x3.50 2.91x3.50 2.91x3.50 2.91x3.50 3.49x3.13 2.91x3.50 3.49x3.13	Mas Mas Mas Mas Zen Zen Zen Zen	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
tiver 550HC, 660 770HC 880HC 950HC 950HC Super 16HC Super 18HC Super 18BHC Super 225HC	4-35 x35 x6 6-31 x35 x4 6-4x4 4-35 x35 x6 6-31 x35 x6 6-31 x35 x6 6-34 x4 6-4x4 6-4x4		54 1750 66 1750 69 1675 42 2000 58 2000	216.5 265.1 302.0 155.0 216.0 265.0 302.0	7.75 7.75 6.20 7.75 7.75 7.75 6.20	125-1200 EA 171-1100 EA 219-1000 EA 232-800 EA	W W W D W W D N		.360 .313 .344 .344 .360 .344 .344 .388	.360 .281 .344 .344 .360 .344 .344 .388	.373 .373 .373 .373 .372 .375 .373 .373	.372 .372 .372 .372 .372 .372 .372 .372	45 (v)	ппппппппппппппппппппппппппппппппппппппп	4 4 4 4 4 4	3 4 4 4 3 4 4 4 7	2.25x1.63 2.63x1.75 2.63x1.56 2.25x1.63 2.25x1.44 2.63x1.50 2.63x1.50	2.25x1.63 2.25x1.63 2.63x1.75 2.63x1.56 2.25x1.63 2.25x1.44 2.63x1.56 2.63x1.56 3.50x2.93	M-Z Zen MaS MaS MaS MaS MaS	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Roiline H540 H844 H854 F1500 F1500 H2000 L3000 L3460 L4000 L4000	8-63-x7 12-63-x7 12-63-x7 12-71-x7 12-71-x7 12-71-x7	286 - 2400 330 - 2600 215 - 1200 230 - 1200 300 - 1200 435 - 1200 470 - 1200 595 - 1350	300 2600 205 1200 220 1200 275 1200 280 1200 410 1200 435 1200	844.0 884.0 1503.0 1503.0 2004.0 2004.0 3006.0 3468.0	6.7( 7.6) 5.0( 6.2( 5.0) 6.2( 5.0) 6.2( 5.0)		WWNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN		.625	.450 .480 .548 .548 .548 .548 .548 .548 .625 .625	.624 .624 .624 .622 .622	.434 .434 .624 .624 .624 .624 .621 .621	45 45 45 45 45 45 45 45 45 45 45	BO E E E E E E E E E E E	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	4 3 3 4 4 8 8	3.75x1.38 3.93x5.28 3.93x5.28 3.93x5.28 3.93x5.28 3.93x5.28 5.50x2.38 5.50x2.38	2 3.25x1.12 3.75x1.38 3.75x1.38 3.93x5.28 5 3.93x5.28 5 3.93x5.28 5 3.93x5.28 5 3.93x5.28 5 3.93x5.28 5 5.50x4.33 5 5.50x4.33 5 5.50x4.33	Ens Zen 2 Ens 2 Zen 2 Ens Zen 4 Ens Zen 4 Ens 2	3 3 2 3 3 2 2
Waukesha (12) ICK (12) FC (11) 180GKB (12) XAM (11) 185GLB (11) 189GLB (11) 140GLB (12) WAK (11) 145GLB (12) WAK (12) WAK (12) WAK (12) WAK (12) WAK (13) 180GLB (12) WAK (12) WAK (13) 180GLB (12) WAK (13) 180GLB (12) WAK (13) 180GLB (13) 180GLB (14) 180GLB (15) WAK (14) 180GLB (15) WAK (14) 180GLB (15) WAK (14) 180GLB (15) WAK (15)	4-3%x3% 4-3%x3%	18-260( 35-240( 50-240)( 47-200)( 67-240)( 103-240)( 122-300)( 147-280)( 153-280)( 153-280)( 170-225)( 188-260)( 216-200)( 240-240)( 250-240)( 222-160)	1 44 200	188 (	1 5 5	0 41-1800 (BE 8 97-1400 (BE 0 131-1400 (BE 0 131-1400 (BE 0 131-1400 (BE 0 123-1200 (BE 0 224-1400 (BE 0 244-1400 (BE 0 244-1400 (BE 0 354-1200 (BE 0 354-1200 (BE 0 428-800 (BE 0 453-800 (BE 0 453-800 (BE 0 598-1000 (BE 0 598-1000 (BE 0 630-1100 (BE 0 630-1100 (BE 0 630-1100 (BE 0 630-1100 (BE	1 84		. 281 . 312 . 302 . 312 . 358 . 406 . 455 . 452 . 531 . 544 . 524 . 524 . 594	. 281 . 281 . 275 . 281 . 375 . 411 . 413 . 405 . 434 . 540 . 524 . 524	.312 .373 .375 .375 .375 .373 .372 .435 .434 .434 .437 .500	.312 .372 .375 .373 .375 .372 .372 .433 .434 .434 .437 .437 .437	45 441 45 45 441 441 441 46 (h)	ENENNEEEEEEEE	4 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	3 3 4 4 4 7 7 7 7 7	2.12x1.1( 2.25x1.6; 2.00x1.8( 2.63x1.8( 2.63x1.8) 2.63x1.9( 3.25x1.9( 3.25x1.5( 3.25x1	ND1207 8 2.12x1.4: 8 2.00x2.5: 8 2.63x1.7: 8 2.63x1.7: 8 2.63x1.7: 8 2.63x1.7: 8 2.63x1.7: 9 3.25x2.5: 0 3.25x2.5: 0 3.25x3.0: 9 3.25x3.0: 9 3.25x3.0: 9 3.50x3.5: 0 3.50x3.5: 9 4.00x3.2:	3 Op 3 Op 3 Op 5 Op 5 Op 6 Op 0 Op 0 Op 0 Op 0 Op	111111111111111111111111111111111111111

### **ENGINES** - continued

		MAXI BRAK at Specific	E Hp.	, In.							VALVE	is.			Piston	_	CRANKS	HAFT	CARE	
ENGINE MAKE	iders,			nent (Cu.	Ratio	with or	-Type			ift n.)	Dian	em neter n.)	Se	eats	per	1	MAIN BEA			
MODEL	of Cylinders. I Stroke (In.)	re Engine	Standard	Displacement	ssion Ra	um Torque at (Lb. Ft.) with Accessories	Liners	nent					(Beg.)	Used?	of Rings		Lengti			
	Number o Bore and	With Bar	With Sta Accessor	Piston D	Compres	Maximu R.P.M.	Cylinder	Arrangement	Intake	Exhaust	Intake	Exhaust	Angle (D	Inserts	Number	Number	Frant	Rear	Make	Size
Waukesha (Conl'd) **(11) WAKB 135GK 139GZ **(12) NKRB 412) LRORB *12) LRORB *U. LRORB	6-61-x6 6-41-x5 6-43-x5 6-7x8 6-81-x8 6-93-x8 12-81-x8	280-1800 134-2400 143-2400 316-1150 432-1100 515-1200 900-1200	255-1800 112-2000 118-2000 276-1050 405-1000 482-1100 867-1200	426.0 451.0 1905.0 2894.0 3520.0	5.20 6.25 6.30 6.50 6.60 6.10 6.75	1000-1000 (BE) 325-1200 (BE) 348-1200 (BE) 1520-800 (BE) 2260-800 (BE) 2775-600 (BE) 4530-800 (BE)	W D N W W W W		.656 .371 .371 .709 .750 .770	.656 .350 .350 .709 .840 .698	.500 .435 .435 .620 .562 .681	.500 .434 .434 .619 .562 .681	(h) 45 45 (h) 30 (h)	E E E E E Bo	4 4 4 5 5 5	7 7 7 7 7 7 7 7	4.00x2.19 3.25x1.91 3.25x1.90 5.25x3.44 4.25x4.81 5.50x4.75 6.25x4.75	4.00x3.25 3.25x2.50 3.25x2.50 5.25x5.56 4.25x5.50 5.50x5.50 6.25x4.75	Op Op Op	2 13 13 21 21 4
Wisconsin VE-4 VF-4 VH-4 VG4D VR4D	4-3x3\4 4-3\4x3\4 4-3\4x3\4 4-3\5x4 4-4\4x4\5	21.5 2400 25 2400 30 2800 37 2400 56.5 2200	21.5-2400 25-2400 30-2800 37-2400 56.5-2200		5.44 5.07 5.50 5.05 5.30	94-1500 (EA)	NNNN		.275 .275 .275 .275 .275 .340	.275 .275 .275 .275 .275 .340	.309 .309 .309 .309 .373	.309 .309 .309 .309 .373	45 45 45 45 45 45	Bo Bo Bo Bo	4 4 4 4	2 2 2 2 2	Timken Timken Timken Timken Timken	Timken Timken Timken Timken Timken	Zen Zen MaS MaS Zen	34 34 34 1

### NOTES

- Dual throat.
   Liquid petroleum gas engine.
   Four barrel carburetor.
   Natural gas engine.
   High output.
   Also available in R. H. rotation.
  (2)—Two used.
  (3)—Three used.
  (4)—Four used.

- (11)—Autometive power ratings.
  (12)—Industrial power ratings.
  (h)—Intake, 30; exhaust, 45.
  (n)—Intake, 45; exhaust, 44.
  (v)—Intake, 45; exhaust, 43.

### ABBREVIATIONS

- Alg-Algas.

  Ba-Ball bearing.

  BE-Bare engine.

- Bo-Used in both intake and exhaust

- Bo—Used in both intake and exhaust seats.

  Car—Carter Carburetor Corp.
  Cen—Century.
  C.Z—Carter or Zenith.
  D—Dry liners.
  E.—Used on exhaust valve seats.
  E.A—Engine with standard accessories.
  Ens-Ensign.
  Hol—Holley Carburetor Co.,
  Hyd—Hydraulic valve lifters.

- I—In head (valves).
  L—Valves at side (L-head).
  MaS—Marvel-Schehler or Zenith.
  MaV—Marvel-Schehler or Zenith.
  MaV—Marvel-Schehler or Zenith.
  MaV—Optional.
  —Optional.
  Str.—Stroniberg-Elmira Div.
  Wet liners.
  Zen—Zenith Carburetor Div.

### DIESEL ENGINES

For addresses of manufacturers, see page C1

						GI	ENERAL							BE	AIN AR- IGS	SYST				18	ART- NG THOD
ENGINE	n.3	Type		14	With Bare Engine		tandard sories	101	ressure uous	snor	ď.	Rings					Open or Closed				
MAKE AND MODEL	Number of Cylinders Bore and Stroke (In.)	Cylinder Liners T	Cycle	Piston Displacement (Cu. In.)	Maximum Brake Hp. at Specified R.P.M.	Max. Intermittent Hp. at Specified R.P.M.	Continuous Sustained Hp. at Specified R.P.M.	Compression Ratio	Max. Combustion Press (Lb. per Sq. In.) B.M.E.P. at Continuous Hp. (Lb. per Sq. In.)	Weight per Continuous Hp. (Lb.)	Max. Torque in Lb at Specified R.P.M	No. of Compression	No. of Oil Rings	Number	Diameter (In.) Make of Pump	Make of Valve	Valve Type Open	Sq. In.)	Fuel Filter - Make	Make	Туре
6DCS-187 8DC-250 8DC-250 D-34 D-51 48D-15 6BD-23 D-26 TDS-51	3 6 3 4 x 4 1 9 6 6 3 x 8 3 4 9 6 6 3 x 8 3 4 5 8 6 3 x 8 3 4 4 4 4 4 x 5 3 6 6 4 4 x 5 3 0 6 3 7 x 4 3 3 0 6 5 1 x 6 1 0 6 5 1 x 6 1 0 6 5 1 x 6 1	N W W W W W W W W W W W W W W W W W W W	4 4 4 4 4 4 4 4 4 4 4	273 1879 1879 2505 2505 344 516 153 230 262 516 844 844	74 - 2100 282 - 1300 340 - 1300 388 - 1300 88 - 1800 131 - 5 - 1800 40 - 2400 62 - 1650 155 - 2200 340 - 1800	58-2000 232-1200 290-1200 312-1200 400-1200 68-1800 106-1800 52-2400 190-1800 265-1800	51-2000 208-1200 265-1200 265-1200 350-1200 64-1800 90,5-1800 27-2000 40-1800 170-1800 225-1800	14.20 13.00 13.00 14.90 14.40 15.30 15.30 15.30 14.50	725 73.1 725 93.1 825 69.8 875 92.2 82.2 77.1 725 70.0 725 76.0 470 88.0	33.4 37.0 30.0 28.1 21.5	204 1400 1580 700 1900 800 2390 800 220 1000 402 1200 104 1400 212 1300 430 1600 640 1400 925 1400		2222222222222	77799575777777	2.50 AB 4.50 AB 4.50 AB 4.69 AB 3.50 AB 2.50 AB 2.50 AB 2.50 AB 3.75 AB 3.75 AB	AB AB AB AB AB AB AB AB AB	000000000000000000000000000000000000000	000 Vor 800 Uni 800 Don 800 Don 000 Don 000 Uni 000 Uni 000 N 000 CR 500 Fra 500 Fra	Cb P-S Pur Pur Com Fra Fra Com Fra Fra	DR D-N LB LN DR DR AL AL DR DR	Ele E-G AEG AEG Ele Ele Ele Ele Ele Ele
D31 D315G(1 D31 D318G(1 D326 D337	8 6 41 x51 2 F 6 51 x61 2 F 6 51 x61 2 F 6 51 x61 2	W W W W W W W W W W W W W W W W W W W	4 4 4 4 4 4 4	252 350 350 525 525 805 805 831 1246	175-2000 200-2000 310-2000	63 - 2400 71 - 2000 100 - 2000 107 - 2000 150 - 2000 177 - 2000 265 - 2000 119 - 1200 193 - 1300	47-2000 54-1800 75-1800 81-1800 113-1800 132-1800 181-1800 93-1200 147-1200	18.00 18.00 17.20 17.20 15.70	0 940 78 0 1150 101 0 940 75 0 1350 101 5 900 75 5 1206 102 0 720 79	40.7 26.5 36.2 21.8 27.0 20.5 40.9	165 1600 238 1200 315 1400 350 1200 472 1400 604 1200 815 1400 600 800 905 800	3 3 3 3 3 3	1 1 1 1 1 1 1 1 1	5 5 7 7 7 7 7	3.00 Owr 3.50 Owr 3.50 Owr 3.50 Owr 3.50 Owr 4.25 Owr 4.25 Owr 3.73 Owr 3.75 Owr	Own Own Own Own Own Own	000000	750 Don 750 Don	Com Com Com Pur Pur Pur	ODS ODS ODS ODS ODS ODS ODS	AEG AEG AEG AEG AEG AEG

Continued on next page. For references and abbreviations, see page C19

### **ENGINE SPECIFICATIONS**

### DIESEL

							GE	NERAL								MA BE/	AR-		SYST	EM				STA IN MET	G
ENGIN		n a	-Type		ut.	With Bare Engine	With St.		- to 1	Pressure	nous L)	snen	2	n Rings		1				or Closed	Opening				
MAKE AND MODE		Number of Cylinders Bore and Stroke In.	Cylinder Liners -T	Cycle	Piston Displacement (Cu. In.)	Maximum Brake Hp. at Specified R.P.M.	Max. Intermittent Hp. at Specified R.P.M.	Continuous Sustained Mp. at Specified R.P.M.	Compression Ratio	Combustion per Sq. In.)	B.M.E.P. at Continuous Hp. (Lb. por Sq. In.)	Weight per Continuous Hp. (Lb.)	Max. Torque in Lb. at Specified R.P.M.	of Con	No. of Oil Rings	Number	Diameter (In.)	Make of Pump	Make of Valve	e Open	Pressure Nozzle (Lb. per Sq. fn.)	Air Cleaner Make	Fuel Filler - Make	Make	Туре
D3	D342C(T)	6 5 5 4 x 8 6 6 1 x 8 8 5 3 x 8 8 5 3 x 8 8 5 3 x 8 8 5 3 x 8 12 5 3 x 8 12 5 3 x 8 12 5 3 x 8	******	4 4 4 4 4 4 4 4 4	1246 1246 1473 1662 1662 1662 2493 2493 2493	320-1300 390-1300 430-1300 650-1300	248-1300 320-1300 254-1300 329-1300 382-1300 388-1300 493-1300 548-1300	208-1200 214-1200 274-1200 220-1200 284-1200 307-1200 282-1200 339-1200 429-1200 429-1200	16.00 16.00 16.00 10.00 16.00 16.00	0 1170 0 750 0 1000 0 1150 0 750 0 1000 0 1150	95 120 129 119 95 119 132	26.0 24.0 22.7 37.0 30.3 28.2 28.9 31.6 26.1 23.5 24.9	1600 - 900 1220 - 900 1625 - 800 1860 - 850 1350 - 700 1865 - 800 2400 - 800 2640 - 900 2030 - 700	3333333333	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	775555777	3.75 4.63 5.50 5.50 5.50 5.50 5.50 5.50	Own Own Own Own Own Own	Own	0000 00	750 750 750 750 750 750 750	Don D-P Don Don	Pur Com Com Com Com	ODS ODS ODS ODS ODS ODS ODS	AEG AEG AEG AEG AEG AEG AEG
Continental	HD-243 HD-260 TD-427 RD-672 TD-6427 RD-6572 SD-802 ED-201 JD-382 VD-603 ZD-129 HD-277 GD-193	4 33 x43 x43 x43 x43 x43 x43 x43 x43 x43	\$\$\$\$20205\$\$2\$\$\$	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	157 243 280 427 572 427 572 802 201 382 602 129 277 193 208	172 - 2400 202 - 1800 45 . 5 - 2000 87 - 2000 197 - 2600 34 - 2000 79 - 2400 56 - 2250			15.8 15 14.5 14.5 14.5 14.5 14.7 15 14.5 15.8 16.2 15.3	0			113-1200 178-1200 188-1100 310-1200 428-1300 307-1200 428-1300 620-1200 145-1100 276-1000 95-1200 202-1100 154-1200 145-1100	3333333333333333	1 2 2 2 2 2 2 2 1 2 2 1 1 1	3 7 7 7 7 7 3 3 5 3 3 3	2.37 2.87 2.87 2.87 3.25 2.87 3.25 3.75 2.62 3.50 2.50 3.06	Opt			1850 1850 1850 1850 1850 1850 1850 1850	Opt	Opt	Opt	Ele Ele Ele Ele Ele Ele Ele Ele Ele Ele
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### ENGINE SPECIFICATIONS

### **ENGINES** - continued

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ENGIN		n.)	Type		=	With Bare Engine	With Str Access		to 1	Pressure	snont	le.)	0000	5.	n Rings						or Closed	Opening				
MAKI AND MODE		Number of Cylinders Bore and Stroke (In.)	Cylinder Liners T	Cycle	Piston Displacement (Cu. In.)	Maximum Brake Mp. at Specified R.P.M.	Max. Intermittent Hp. at Specified R.P.M.	Continueus Sustained Hp. at Specified R.P.M.	Compression Ratio	Max. Combustion	F. P. at	1	Weight per Continuous Hp. (Lb.)	Max. Torque in Lb. at Specified R.P.M.	No. of Compression	No. of Oil Rings	Number	Diameter (In.)	Make of Pump	Make of Valve	- 60	(Lb. per Sq. In.)	Air Cleanor - Make	Fuel Filter-Make	Make	Туре
ieneral Motor	rs (Cont'd)	E ALCOR	D	2		218-2100	194-2000	170, 1000#	12.0	0 100	0 1	88	11.8	562 1200	4	2	7	3.50	0 Own	Own	C	450			DR	Ele
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### **ABBREVIATIONS**

ABBREVIATIONS

- Without fan or muffler.
- Based on automotive or industrial weight,
- Turbocharged,
- Turbocharged,
- Turbocharged,
- Front and center, 2.75; rear, 3.00.
- Air,
- AB - American Bosch,
- AC - AC Spark Plug Co.
- AD - AC and Donaldson.
- AE - Air or electric.
- AEG - Air, electric or auxiliary gasoline engine.
- AEL - Air, electric or inertia.
- A-EL - Air or electric.

Al—Auto-Lite (electric), Ingersoll-Rand (air),
AL—Electric Auto-Lite Co.
A-R—American Bosch or Roosa Master.
B-D—Bosch or Demco.
B-K—Bosch or Roosa.
G-Closed.
C—Commercial and Bosch.
Com—Commercial Filters Corp.
CB—Cedar Rapids.
D—Dry liners used.
D—M—Donaldson or Air Masse.
D—N—Delco-Remy or Novo.
Don—Donaldson.
D—Delco-Remy or Novo.
Don—Donaldson or Purolator.
DR—Delco-Remy Div.

DRW—Delco or Waukesha,

DS—Delco-Remy and Schwitzer,

E-G—Electrie or auxiliary gasoline engine,

E-H—Electrie or hand,

Ele—Electrie,

F-A—Fram or American Bosch,

FI—Fulflo,

FIA—Fram Corp.

G—Auxiliary gasoline engine,

GS—Gasoline and spark ignition,

LB—Lece Neville or Buda.

LD—Lece Neville Or Buda.

LN—Lece Neville Or Buda.

LN—Lece Neville Or Buda.

LN—Lece Neville Or Buda.

LN—Lece Neville Or Buda.

MH—Mann and Hummel.
N—No or none,
ODS—Own, Delco-Remy and Schwitzer,
Opt—Optional.
P-A—Purolator or AC.
P-S—Purolator or Rewart-Warner.
Pur-Purolator Products, Inc.
R-B—Robert-Bosch.
RM—Rooss-Master.
Sh—Shaft torque; shaft RPM.
Sim—Sumu.
Uni—United Air Cleaner Div.
Vor—Vortex.
W—Wet liners used.

### **EQUIPMENT SPECIFICATIONS - Heavy-Dut**

# HEAVY-DUTY AND OFF-HIGHWAY TRUCKS

Specifications below are for standard models only. Optional engines, transmissions and rear axles are available. Additional on-highway truck specifications begin on page 122

Was	Total Lining Area (Sq. In.)	712 842 842 117 117 117 117 117 117 117 117 117 11	871	8	854 10072 10		
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	Geer and Type	THE SET SE	11	******	*********	4.05	999977777777
REAR AXLE	Make and Model	1614 SDH SPH SBH 34R 36R 8D72000 ED72000 28MP 34R 8D48000 28MP 8D48000 8D72000 8D72000	SQHD	U2008 1758 1758 U200 U200 1758DPA SW456 SD3010	348A 808A 478A 478A 478A 308A 308A 508A		CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
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ENGINE	No. of Cylinders— Bore and Stroke		8-3-1x35-8	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6		8-311x3/2	
	Make and Model	Ind32 Ind32 BD32 BD32 BD30 RD40 RD50 RD50 RD50 RD50 RD50 RD50 RD50 RD5	M8-T8	HD501 HR8600 R6602 HR8600 RXLD RKLD HR8604 HR8604	4-71 NHRS NHRS NHRS 6-110 6-110 6-110 NTOB12 NTOB12 NTOB12 NTOB13	************	R6602 NHB600 NHB600 NHB600 NB600 T6427 JBS600 JBS600 HRFB600 NHB600 HRFB600 HRFB600
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F	Front	7.50x20 7.50x20 8.25x20 9.00x20 10.00x20 11.00x20 12.00x20 12.00x20 13.00x20 14.00x20 14.00x20 14.00x20	9.00x22.8	11.00x20 11.00x20 11.00x20 11.00x20 11.00x20 14.00x20 10.00x20	11.00x26 13.00x26 14.00x26 14.00x26 14.00x26 14.00x26 18.00x26 18.00x26 18.00x36 18.00x32 18.00x32 18.00x32 27.00x32	8.25x20	11.00x22 11.00x22 11.00x22 10.00x20 10.00x20 11.00x20 11.00x22 11.00x22
yo.	Chassie with Cab and Body	8,000 11,460 11,460 13,880 13,880 13,880 11,880 11,680 11,600 11,400 11,		10.630 113.300 113.300 11.300 11.300 11.900 11.500	21,800 44,550 43,300 43,300 43,300 48,300 48,100 78,000 116,000 116,000 44,000 62,260	13,000	11, 285 12, 548 11, 13, 286 11, 147 11, 145 11, 145 11
WEIGHTS	G.C.W.		65,000				
	G.V.W.	25,000 33,500 35,500 45,000 46,000 66,000 68,000 68,000 37,000 37,000 100,000	45,000	744777794 000000000000000000000000000000	41,600 68,200 68,500 87,300 87,500 87,500 102,100 118,000 216,000 216,000 218,000 88,000 88,000	40,000	40.000 40.000 42.000 42.000 48.000 48.000 48.000 48.000
WHEEL- BASE	mumixaM brabnas2	Opt	192	184 190 178 232 232 208	148 155 165 177 177 177 180 180 219 219 219 218 236	Opt	193 193 193 193 193 193 193 193 193 193
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Crane Carrier.

### Heavy-Duty Trucks - EQUIPMENT SPECIFICATIONS

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### **EQUIPMENT SPECIFICATIONS - Heavy-Duty Trucks**

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2	Forward Speeds Reverse Speeds	**************************************	###4#5555555555	2		12	-
TRANSMISSION	Make and Model	9C68 4MS1440 10F1220 10F1220 10F1220 10F1220 10F1220 10F1220 10F1220 10F1230 10F1230 10F1230 10F1233 10F1233 10F1233		285V	MT2100 1 G802 1 G802 MT817 MT817 MT817 MT817 MT818 MT828 MT828 MT828 MT828 MT838	1908	5A65
	(or a semi) ambuna	TANE TO SECOND S	6 0wn	8 Cla	A MIL. S ANI. S	Spi	Ful
	Torque (Lb. Ft.)	2500 360 2500 360 2500 360 2100 800 2100 800 2100 800 2100 1075 2100 1075 2100 1075 2100 300 206 2100 380 2100 380 286 286	00 885 00 1240 00 1240 00 617 00 617 00 865 00 685 00 685 00 885 00 685 00 885 00 885 00 885 00 885 00 885 00 885 00 885	328	2000 644 2100 865 2200 880 2200 880 2200 880 2200 880 2200 880 2200 880 2200 1070 2200 1070 2200 1070 2200 1070 2200 1070 2200 885	30 800	354
	Max. Brake Hp. at R.P.M.	160 2500 175 1800 320 2100 320 2100 320 2100 335 2100 425 2100 425 2100 425 2100 425 2100 320 2100 320 2100 320 2100	170 - 2100 320 - 2100 320 - 2100 450 - 2100 232 - 2100 232 - 2100 205 - 2100 226 - 2100 226 - 2100 226 - 2100 226 - 2100 227 - 2100	212 3800	190 2000 220-2100 190 2000 190 2000 190 2000 240-240 240 240 240 240 240-240 240 240 240 240 240 240 240 240 240	200 2100	207 3400
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		Con	Country Countr	5 Ford	Cum	Cum	Own
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	Chassis with Cab and Body	19,000 44,000 88,100 88	33.000 660.000 600.000 600.000 78,460	10,838	16,000 131,500 14,500 16,000 16,000 16,000 17,000 1		40 810
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### **Dumpers** - EQU ONS

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	5200	12	EEE	Od.—Cotta.  Dam.—Cummins Engine De.—Dentz (Diesel En Der.—Double reduction, Der.—Double reduction, Ed.—Eaton Atle Co. EDT.—End dump, true EDT.—End dump, true F. Full flooting.
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3111111111111111111111111	1111	:	111	reduction; free croot trailer.
		-		
800000000000000000000000000000000000000	8888	000	888	AH. Air over hydraulir.  All - Alisan Div.  Boff - Bevel gear, double reduction; j  Boff - Bevel gear, double reduction; j  Boff - Beven dump, tractor trailer.  Bu. Beven-Lip.  Ch. Chassis, Westinghouse.  Ch. Chassis, Westinghouse.  Clar - Charsler Corp.  Clar - Charsler Corp.
******	5,5,5,5,	42,	45.55	AH. Air over hydraulir.  All Allison Div.  Boff Bevel gear, double Goating.  Boff Botton dump, to Botton
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		***	111	IATI
		-		ABBREVIATIONS only; drive axle d. d. only; drive axle sis ft. e speed in combin
			ranc	ABBRI two. actor only; axle, 30 ft. vo used. artor only; axle, 33 ft. vn five spee
	ucketell	Walter	Ward La France	ABBREVIATIONS  1—Or two.  2—Tractor only; drive axle to trailer  3—Two units. 30 ft.  4—Tractor only; drive axle to trailer  4—Tractor only; drive axle to trailer  5—Som five speed in combination with  4—Air.  A—Air.
	Frucketell	Valte	Vard	1 Trac
	-	5	3	1 mm m d d et

SbP-Spiral bevel, plane	PER
MF - Hypoid, full floating.	AR DUMPER
- discount	I, REAR
p. Funk.	FRONT
Cont.—Continental Motors Corp.	
	BOTTOM,
A-Air.	BO.

ENGINE

CAPACITIES

WEIGHTS (Lbs.)

N.S		Meight	10.8%	77.5	971.2 1031.2 106.2
DIMENSIONS		чірім	11.6	11.00	10.9
ā		цивиод	35.111.2	35.5	39*11 465*12 463*12
ES rd Ply)		How	26.5x25 20 24x29 24	29.5x25.24 33.5x33.32 29.5x29.40	24x25-18 24x25-24 24x25-24 27x33-24 27x33-30
(Size and Ply)		front	26.5x25 20 26.5x25 20 24x29 34 24x29 24	29.5x25 22 33.5x33 32 29.5x29 28	12x28 14 14x25 16 14x25 16 14x25 16
		Steering Type	Hyd	HAY	PRESE
		Clutch Type	SPD	111	82222
		Нечетве	8.6	5.03	5.08
		Fitth	22	2.30 2.30	SZZZZ
NOI	(To 1)	Fourth	88	3.67	N.N. N. 670 670
SMISS	Ratios (To 1)	Third	1.75	3.92	5 88
TRANSMISSION		gecou.,	3.36	4.97	3.38
		First	2.2	6.53	2 88
		Lype	Conv	Conv	ALLER

Fuel Used

Diaplacement (Cu. In.)

Payload (Tons)

Heaped (Cu. Yds.)

Struck (Cu. Yda.)

Complete Unit— No Load

MAKE

Lype

No. of Cylinders— Bore and Stroke (In.)

230 2000

841.3

20.0 Own 28.0 Own 25.0 Cum 35.0 GM 35.0 Cum

15.0 33.0

17.0 21.0

80

743.0 240-860.0 375-743.0 300-

HRS6 6-51 x6 6-110T 6-5x5... NRT6 6-51 x6

14400

CWD-214 CWD-221 CWD-321

Curtiss-Wright Allie-Chalmers

222 2222

55555

17.00

4.00 2.01 1.00 .670 N (2) 4.00 2.01 1.00 .670 N (2) C24 abbreviations, see page Conv Conv Author Continued on next page. For references and 216-2100 300-2000 325-2000 335-2100 426.0 660.0 743.0 743.0 6-71 6-41 x5 6-110 6-5521 NRT681 6-5-26 6-110 6-5451 NRT0681 6-5-26 20.0 GM 28.0 GM 38.0 GM 39.0 GM 38.55.5

### **EQUIPMENT SPECIFICATIONS - Integral Front-End Loaders**

BOTTOM, FRONT, REAR DUMPERS-continued

		WEIGHTS (Lbs.)	HTS.	CAPACI	ACITIES	ES		2	ENGINE			1	-	TR	TRANSMISSION	SION	1	T		(\$	(Size and Ply)		DIMENSIONS	SNO
MAKE				(	(			(ini)		.00	0				Ratio	Ratios (To 1)			-					
MODEL	Type	Complete Unit— No Load	Complete Unit— Incl. Payload	Struck (Cu. Yds.)	Heaped (Cu. Yds	(enoT) beolys9	Make and Model	No. of Cylinders- Sore and Stroke	Displacement (Cu. In.)	Brake Horsepowe at A.P.M.	Maximum Torque M.q.R Is	Fuel Used	Lype	First	bridT	Fourth	Fifth	Вечегае	Clutch Type	Steering Type front	Real	Length	чирім	зиціон
Koehring W60	66	16300	32800	8.0	6.3	8.3 GM.	6-71	6-4-x5 6-4-x5	426.0	109-1800	360-1100	00	Conv 65. Aut 20.	65.00 35.50 20.8 7.35	50 18.30 35 N	zz	zz	80	SPD H	Hyd 16x25 Hyd 21x25	16 10x20 1 20 12x36 1	12 147"	10.0	10.10%
Le Tourneau-Weetinghouse D	88888888	22300 43800 43800 75300 76200 41045	44300 87800 87800 445300 46200 81045 81045	7.0 14.7 23.0 23.0 9.0 10.5 10.5	10.5 222.0 31.0 31.0 13.5	11.0 GM 22.0 GM 38.0 GM 38.0 GM 10.0 GM 20.0 GM	4-71 HS681 6-110 NRT0681 4-71 HS681	40000400 4440 444 855 855 855 855 855 855 855 855 855	283.7 425.6 672.0 660.0 283.7 425.6 672.0	138 2000 226 2100 210 1800 335 2000 335 2000 210 2000 210 2000	375 1600 600 1500 670 1250 900 1600 900 1500 375 1600 670 1250	00000000	Convi Convi Convi Convi Convi				IIIIIIII		SS ST S	Ele 24x25 Ele 24x25 Ele 24x25 Ele 27x33 Ele 27x33 Ele 27x33 Ele 24x25 Ele 24x25	16 18x25-1 24 24x25-2 24 24x25-2 30 27x33-3 30 27x33-3 16 18x25-1 18 24x25-1	24-10° 24-296° 30-367° 30-367° 31-372°	11.3 11.3 12.6 9.3 9.3	96. 11.44. 14.00. 740. 740.
chigan 110	RD	31500	97500	63	12.0	13.0 Cum	JT6B1	6-41-x5	401.0	162-	407-1750	0	PS			-	1	-	10	Hyd 23.5x2	23.5x25-16 23.5x25-16	18 27738"	8.8	9.10
Yuba-Movali RD20, RD15 RD16 RD360-AC RD360-AC RD361-IM RD55-IM	22222	35000 23340 35000 35000 23340	99000 67340 99000 99000 67340	19.0 19.0 12.0	25.0 25.0 25.0 16.0	32.0 Cat 22.0 Cat 32.0 Cat 32.0 Int 22.0 Int											11111		11111			26'3° 19'0° 19'0°	11.0	104° 97° 104°
ABBREVIATIONS 1—Torque converter optional. 2—Two reverse speeds. 3—Samo as formating the statement of the st		Aut Aut Aug	AC—Allis-Chalmers Mfg. Aut—Automatic. BD—Bottom dump.	mp.	. Co.	-	Convertions Cum—Cummins D D—Diesel oil.	Conv—Conventional. Cummins Diesel Engine Co. D—Diesel oil.	Engine	Ca	Ele—Electric. FD—Front du GM—General	Electric. Front damp.	-Fleetric -Front dump. -General Motors Corp.	Corp.			N-No N-No PS-Po	Inf-International N-No or none. PS-Power shift.	ai Harv	Mt—International Harvester Co. N—No or none. PS—Power shift.	SSS	SD—Side dump. SP—Single plate. SPD—Single plate, operating dry.	e, operating	dry.

## INTEGRAL FRONT-END LOADERS

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		Вгако Туре	ZZZZZZZZI:
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	(·q7	Lifting Capacity (	1500 2000 1500 1000
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		Capacity—Heaper (Cu. Yd.)	200 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
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		Track Length on Ground (In.)	83 12 116 129 18
co.		Wheelbase (In.)	827.2888
MENSIONS	E.	Carrying Position	173 2 1813 176 5 2213
DIMEN	(In.)	Ground Ground	253 254 254 168 173% 211
OVERALL C	-	Tires or Tracks	25.55.55.55.55.55.55.55.55.55.55.55.55.5
OVE	(In.)	Tires or Tracks  —Inorte Front—	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
		Level (In.)  —real Gear—	- 000 KK 000
	,Juio4	Height—Highest Bucket at Ground	98 40 10 10 10 10 10 10 10 10 10 10 10 10 10
		Type	0000\$\$\$\$\$\$
	AKE	AND MODEL	HD-6G HD-116 HD-
	2	¥¥	llie-Chalmers. ase

### Integral Front-End Loaders - EQUIPMENT SPECIFICATIONS

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Saterpillar. Since Gord Antenational-Drott Michigan  Niver Speedall Scoopmobile Frestemetive.	

### **EQUIPMENT SPECIFICATIONS - Graders**

For addresses of manufacturers, see page Cl

## g GRADERS

	WEIGHT (Lb.)	T (Lb.)		OVERALL	L DIMENSIONS	SNO		9	ENGINE				SPEEDS (M.P.H.)	M.P.H.)		MOLD	MOLDBOARD (B	(BLADE)		TIRE	SIZE	
	Front		Total	Width	Height-Without Cab	Height—With Cab	Make and Model		No. of Cylinders— Bore and Stroke (In.)	Displacement (Cu. In.)	Max. Brake Hp at R.P.M.	No. of Forward	No. of Reverse Range of Forward	Hange of Reverse	Pressure—Lb.	Ground Penetration (In.)	Longth & Thickness	Width (In.)	Lift for Ground Glosvance (In.)	Front	Hear	Brake Actuation
61614	2700 6100 2700 6590 6425 17375		8800 18'4" 8350 18'7" 23800 25'9"	777	200	8.975	Own Own	ADS516	4 4x415 6 3 3 x 4 5 6 4 3 x 5 %	226.0 230.0 516.0	58-1650 50-1625 120-1600	440	2.6.25.2	3.2 3.2	10850	:::	10.36.	1655	12 12 19%	6.50/16 6.50/16 9.00/24	7.50/20 7.50/20 13,00/24	Mec
アアアルのののののの	7107 9078 7715 11526 7715 11715 7742 11715 8687 12263 8772 12453 8772 12378 8772 14293 8777 14203		16186 24.0° 18642 25.3° 18867 25.3° 20060 24.8°, 21185 24.8°, 21185 24.8°, 21085 24.8°, 22085 26.3°, 22085 26.3°, 22085 26.3°,	7.00 7.00 7.00 7.10 7.10 8.00 8.00 8.00 8.00 8.00 8.00 8.00 8		8.6.6.0 8.0 8	Z WWWWW Z G G G G G G G	1.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4	*********	212.8 212.8 212.8 212.8 213.7 283.7 283.7 283.7	106-2100 106-2100 106-2100 116-2100 117-2000 100-1800 1172-2000 100-1800	909000000	2 2 2 5 2 2 8 2 2 2 2 2 2 2 2 2 2 2 2 2	999900000000000000000000000000000000000	12400 12540 12550 12550 16250 16250 16400 16400 16400	222222222	23.23.23.25.25.25.25.25.25.25.25.25.25.25.25.25.	ZZZZZZZZZZ	25555555	13.00 24 14.00 20 14.00 20 14.00 20 13.00 24 13.00 24 13.00 24	13.00/24 13.00/24 12.00/24 14.00/20 14.00/20 13.00/24 13.00/24	TITITITITI
66	6715 16440		23155 25'8" 20806 24'11	7.67	7.4.	10'4"	Own		6 4 (x5)	\$25.0 350.0	75-1800		2 2.3-19.3	3 4.0 6.3 0 2.8 4.0	-	11	12.3	22	919	9.00/25	13.00/24	11
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220 66 330 66 65 66 66 66 66 77 66 66 77 66 66 77 66 66	4210 10225 6656 14365 6556 14766 6556 1476 6770 16326 6772 17130 6772 1780 6772 1780 6772 1780 7710 20340 7010 20370 7010 20370		2000 25/3 2000 25/3 2000 25/3 2000 25/4 2000 25/4 2000 25/5 2000 25/5 2000 25/5 27730 26/4 27730 26/4 27750 26/4	25.55.55.55.55.55.55.55.55.55.55.55.55.5	8800.00	100000000000000000000000000000000000000	MW N N N N N N N N N N N N N N N N N N N	4-51 1681 4-71 NHC481 4-71 NHC481 6-71 6-71 6-71 6-71 6-71 6-71 6-71 6-7		216.5 212.8 212.8 401.0 283.7 496.0 283.7 496.0 426.6 426.6 743.0	60-1900 80-1800 80-1800 1115-1800 1125-1800 1135-2000 1135-2000 1135-2000 1135-2000 1135-2000 1135-2000 1135-2000 1135-2000 1135-2000 1135-2000	NBSSSSSS44	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	22.22.22.22.22.22.22.22.22.22.22.22.22.	7210			2222222222222	<b>************</b>	10.00/24 7.50/24 9.00/24 9.00/24 9.00/24 9.00/24 14.00/24 14.00/24	10.00/24 12.00/24 13.00/24 13.00/24 13.00/24 13.00/24 14.00/24	HINIMININ
PM-12 8 PM-12 10 PM-412 10 PM-612 10 PM-612 100	8400 18450 10100 14300 10100 14300 10575 18775		28850 26.4 28400 25.7 24400 25.7 28350 26.4 28350 26.4	111111111111111111111111111111111111111	55555	10.2 10.2 10.2 10.2 10.2 10.2 10.2 10.2	W & W & W & W & W & W & W & W & W & W &	PM529 PM529 PM529 PM529	6 4 4 X X S X X S X X X X X X X X X X X X	283.7 529.0 529.0 283.7 529.0	145-2100 145-2100 145-2100 145-2100 146-2100		900000000000000000000000000000000000000	444444	14650 17800 17800 17850 17850	1111111	25255	222222	22222	14.00.24 14.00.24 14.00.24 14.00.24	14.00/24 14.00/24 14.00/24 14.00/24	TITITI

### Scrapers - EQUIPMENT SPECIFICATIONS

# For addresses of manufacturers, see page CI

# SCRAPERS

				TRACTOR									SCRAPER	PER						00	COMPLETE UNIT	UNIT		
		ENGINE	ш		-	-	TR	TRANSMISSION	NO	CAPACITY		(Cu.Yda.)	u				(1	Overall		Dimensions	TIRES-Size	Size and	P. V.	WEIGHTS
MODEL		ders—	\$11	·dH	1	1		Travel Sp	Speeds— Mph			suoj	Operatio		('ut) iu:	(.nl) tu	nf) baenq							
	Make and Model	No. of Cylin Bore and St (In.)	Displacement (Cu. In.)	Max. Brake at RPM	Fuel	Cintch Type	Reverse Sp	-brawnoi egnafi	Heverae Range	Struck	Heaped	F—baolys <sup>q</sup>	le bortraM	Election	MIGHT OL C	Depth of C	Depth of S	Hignsal	MIGH	Meight	Front	Hoar	Empty (Lb	With Payle
Allie-Chalmers TS-160 TS-260 TS-360	Own TDS516 16000 TDS644	6 - 57,5 x 6 6 - 57,5 x 6 6 - 57,4 x 6	844.3 844.3	156 2200 230 2000 280 2100	000	SPO SPO S		3.0.20.0		7.0	9.5	12.0 20.3 25.0	Cab	955 955	97.5 116 116	M212	248%	34.10%	.9.11	979	16x25-16 26.5x25-2 24x29-24	20 26.5x25-16 20 26.5x25-20 24x29-24	16 28500 5-20 44800 24 49050	00 85400 60 85400 60 99050
Caterpillar DW-15 DW-20	Own	6 5 5 5 6 6 6 5 5 5 6 6 6 6 6 6 6 6 6 6	805.0 805.0 805.0	200 2000 300 1800 300 1800	000	0040		2.8 25.1	1.0.6	18.0	25.0 25.0	19.5 27.5 27.5	de de de	944	1124	Prac	288	40711 th	.,	11.31.5	12x20-14 14x24-16 29/2x29-22	22 29 x 29	5.20 44090 5.22 56195 5.22 58670	90 83090 95 111195 70 113670
Curtiss-Wright CW-27 CW-220 CW-220 CW-220	GM 4085C Cum HRS6 Gum NRT6 GM 6-110T	40000	283.7 743.0 743.0 743.0 660.0	375	00000	00044		30.0 34.4 34.4 34.4	800 B B B B B B B B B B B B B B B B B B	28.000	27.0 27.0 36.0	21.0 31.0 30.0	99999	PR3000	782128 128 128	25 25 25 25 25 25 25 25 25 25 25 25 25 2	28828	28 10° 38 4° 42 19° 47 10 12°	201111	9711	18x25-20 29.5x25- 29.5x29- 33.5x33- 33.5x33-	2222	22223	32500 58500 54000 96000 64500 126500 89000 131000
Euclid 5-7 8-12 85-12 85-18 85-18 85-18 85-18 85-28 8	GM 6-71 GM 6-71 GM 6-71 GM 6-110 GM 6-110 GM 6-110 GM 6-110	77. 6 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	284.0 426.0 426.0 860.0 743.0 860.0 743.0 860.0	143-2100 218-2100 300-2000 320-2100 325-2000 325-2000 335-2100 336-2100 300-2000	000000000	599595555 400054449	aผกกลา	2.9.22.6	3.6	24.00000 24.00000 24.00000	25.0 25.0 32.0 32.0 32.0	27.5 27.5 27.5 27.5 46.0 46.0	PPPPPPPPPP ANALATATI	000000000	2222222	044545455 5445455	82822828	2910* 408* 456* 478* 478*	27766677	944. 944. 103. 103.	18x26 16 24x26 18 12x24 14 14x26 16 14x26 16 14x26 20 14x26 20 14x26 20 27x33 30	27.23 27.23 27.23 27.23 27.23 27.23 27.23 27.23	88822288	28500 47500 6100 86100 86250 86250 56800 111900 85400 114000 87000 147000 87000 160000
International 55		81 6-5/5x6 81 6-5/5x6	743.0	175 1800 262 2100	00	88		2.8 24.1	25.8	10.3	14.0	27.5	Cab	PRO	1001	55	2115	34.0,	10.10	10.2"	28.5x25 29.5x29	20 26.5x25 22 29.5x28	5-20 40865 8-22 54345	65 82865 45 108345
Le Tourneau-Westinghouse C C	GM 6-71 GM 6-71 Cum HS881 GM 6-110	-71 6-4-(15 6-	283.7 425.6 672.0 680.0 743.0	138 2000 226 2100 210 1800 335 2000 335 2100	00000	888807		3.2.29.5 3.3.33.5 2.8.28.7 2.6.28.4 4.8.31.7	22.22.22	7.3 12.2 12.2 21.0 21.0	28.0 28.0 28.0 28.0	20.0 20.0 32.5 32.5	88888	4444	22222	55555	22222	28'1" 37'3" 44'2"	277.6	1011	18x26-12 24x26-18 24x26-18 27x33-24 27x33-24	18×25 24×25 24×25 27×33 27×33	12 22830 18 43860 18 44820 24 68900 24 68900	30 42830 60 83860 20 84820 00 133800 00 134800
Michigan 110 210 210 310				162 1950 262 2100 375 2300	000	***	010101	33.5	888	8.0 13.5 21.6	29.0	13.0 22.5 36.0	HIH	444	2112	= 12	222	32'6'	8'10" 11'2's" 12'0"	117115	23.5x25 26.5x25 33.5x33	16 23. 5x25 28 26. 5x25 26 33. 5x33	5-16 20000 5-26 45000 3-26 72500	00 84000 00 90000 00 142500
Oliver		34,15	213.0	99-2000	00	SPO	NN				6.7		Hyd	PA	111	99	22	30.812		0.117	18x26-10 18x26-10	14x20	12 16	17180
Seaman-Gunnison W480	Int Int	++	281.0	68-1450	00	090		2.4.21.0		8.60	999	0.6	HII	PPP	111		222	25.5.	220	222	18x26 10 18x26 10 18x26 10	10x20-12 10x20-12 11.25x20-1		14800 31500 16300 31500 16300 34300

ABBREVIATIONS

1—Tractor engine only; scraper also has
GM 6-71 Deest engine, 6-49-4x5,
426 cu. in.; 218-2100 hp.

SP—Single plate.
SPD—Single plate, operating dry.
TC—Torque converter.
Un—Unlimited.

Opt—Optional.

PF—Positive forward forced.

Prac—Any practical depth.

PRO—Positive roll out.

DTP—Dozer type, positive.
Ele—Electric.
GM—General Motors Corp.
Myd—Hydraulie.
Inf—International Barvester Co.

Cab—Cable.
Cum—Cummins Diesel Engine Co.
D—Diesel oil.
DP—Double plate.
DPD—Double plate.

2—One used for each engine.

3—Tractor only; scraper also has transmission with three forward and one reverse speed.

4—Gasoline engine also available.

### **EQUIPMENT SPECIFICATIONS-Crawler Tractors**

# CRAWLER TRACTORS

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manufacturers,
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CAPACITIES	Transmission (Qts.) Final Drive Case (Qts.) (Each Case)	82228	m88888 944mm	52 53 52 54 55 55 55 55 55 55 55 55 55 55 55 55	22 25	128 1365	98	22 28 28 28 28 28 28 28 28 28 28 28 28 2	22 22 25 25 25 25 25 25 25 25 25 25 25 2	Orp.  Div. Co. ating in oil.
APAC	Fuel Tank (Gal.) Crankcase (Qts.)	222272	40000	38222	101.01	13	18 238	88882	24.24 24.24	rnor (dry, dry, lutch dry, lutch lut
0	Cooling System (Gal.)	9 40 110 20 210 135	28838	288 85 115 157	21,5 10	8	98 84	33 33 136 136	27.2 2.2.2	Gove Lry. -Mass ord Cony cony Disc Cony Spec Spec
	Steering Type		F2222	33344	Clu	3	(6)	44223300	000000000	herce laneta Roosa Socki nigle orque riple inted
	Cinich—Make and Type	SP Clu	75 70 70 70 70 70 70 70 70 70 70 70 70 70	7000 1000 1000 1000 1000 1000 1000 1000	SPC	MO Clu	TC	20000000000000000000000000000000000000		Pie—Pierce Governot Corp. P.—Pharetay. R.—Pharetay. Roe—Roekford Clutch Div. Roe—Roekford Clutch Div. T.—Torque converter. T.—Torque converter. T.—Torque converter. T.—Torque converter. T.—Triple plate, operating in Uni—United Specialties.
	and be sign dealed	A-R HOC TO	Boc.	00000	Aub.	Own	Ali	800 800 100 100 100 100 100 100 100 100	\$\$EEEEE 66	jv.
	Governor-Make	888888	RAMAN BANK	00000	Own	GM	GM	0000000	BHR BWW W	10°
	Air Cleaner—Make	55556	00000	00000	Don	Vor	Dons	5556655	VODO X VODO X	rs Corp. or Corp. s at side). operating er Carbure ant Co.
	Carburetor or Injector	88888	MA BAS	00000	SE	GM	GM	0000000	MS M	otor otor ves a iv. sc. of chler
	Ignition—Make	ZZZZZ	zzzzz	ZZZZZ	DR	z	z	0000000	SSSSSSSSS	GM—General Motors Corp.  Har—Hartford, Motor Corp.  Har—Hartford, Motor Corp.  1—Valves in head.  Lg—Lon Mic. Div.  Lg—Lon Mic. Div.  MS—Marvel-scheler Carlanton  MS—Marvel-scheler Carlanton  No or none.  No respective to the corp.  No —No or none.  O—Diesel oil.
	Fuel Used	00000	00000	00000	202	0	0	0000000	000000000	L Hand
	No. uf Main Bearings (In.)	11111	88888	44999	1212	62	4	444488	4448VVVV	ONN MACHINES
	InomegneriA evisV					-	-			
_	Displacement (Cu. In.) R.P.M. at Governed Speed	344 1800 516 1800 844 1600 844 1825	148 1850 209 2250 208 2250 277 2250 382 2000	350 1600 525 1600 631 1200 1246 1200 1473 1240	113 1850	284 2000	1264 2100	281 1550 281 1550 350 1550 554 1650 691 1500 091 1500	130 1700 130 1700 216 1600 226 1530 226 1530 288 1750 895 1500	"Power Turn"  "Power Turn"  otor.  ng in oil.
ENGINE	No. of Cylinders—Bore and Stroke (In.)	4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	4-3%x4% 6-3%x4% 4-4%x6	6 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2-4)4x4 2-4)4x4	4-4)4x5	6-41,x5 4	444499 444499 44449477	6 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Diff—Differential.  Dof—Double take, operating in o Dof—Double take, operating in o DP—Double plate, dry.  DP—Differential or "Power steering. The proper steering or "Power steering."  Ele—Electric stating motor.  Ele—Electric stating motor.  G—Gasoline operating in oil.  GE—Independent gasoline engine.
	Make and Model	Own Own Own	Cont C148 Cont F209 Cont ED208 Cont HD277 Cont JD382	Own D4 Own D7 Own D8	Own. 430	GM4080	GM 6-717	Own C281 Own D281 Own D350 Own 681 Own D1091	Her G0130 Own O056 Own O056 Own O056 Her D00C Her DNCC Her DNCC Her DFXE	Differential  Differential  Double blake, oper  Double blake, oper  Double blake, dry,  Sterine, dry  The dry
1	(.M.9.M) serovefi figiH	5.5 6.8 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	00000	8488	00	9	(0)	55.55 65.85	EE 9988	200000 20000
ED	Low Roverse (M.P.H.)	83.25	1.90	2.20	68	1	2.00	8888888	83 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	"Power
M. M.	Sixth Gear (M.P.H.)	5.3	11111	7.00	11	***	-	3.00	80 80 80 80	
SPEEDS GOVERNED R.P.M.	Fifth Gear (M.P.H.)	848	11111	928.88	11	100	-	558885	5.15	d ditial.
MAL	Fourth Gear (M.P.H.)	888	3388	28888	7.34			88888888	5.27 5.27 5.27 5.60 5.85 5.85	rekford th Co. ch Co. ifferential Motors C
TRAVEL S NORMAL ( ENGINE	Third Gear (M.P.H.)	7.20	33.3662	88588	2.98	1	7.80	8222233	33.23.23.33	Mer. Roor Roor Roor Boss or di
¥	(.H.q.M) wed brose?	8.300.49	23.22	28282	2.23	6.00	4.00	22.00023	F. F. 4 4 5 8 8 8 8 8 8	Allison Dir.  Auburn of Bestond —Auburn (Butch Co. —Auburn (Butch Co. —Clutches or differenti —Continental Motors Detailiste. —Dam Cor. —Dam Cor. —Turn.
	First Gear (M.P.H.)	32.460	1.60	86586	44.	2.00	2.00	282888	8688888888	II—Allison I II—Allison I II—Aubarr III—Clutch III—Clutch III—Contin III—Distillate IIII—IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
10	Sixth Geor (Lb.)	3900		10800	11		. 4 4 5 .	4400	088	All—Alison Diversified And—Alison Diversified And—Alison Clutch Co. Boomerican Book Co.—Cultchess or differential Clutchess or differential Clutchess of Definition and Corp. Definition of Definition
AR PU	Fifth Goar (Lb.)	2875		2600 3600 5280 9490 16800				2337 2403 2864 6600 8100 14560	2250	20; 20; Eb,
DRAWBAR PULL NAL GOVERNED INE R.P.M.	Fourth Gear (Lb.)	4450 6800 11270	4450 4450 5660 6770	4110 8150 7550 14120 22400	1424			3493 3580 4278 8800 12000	1261 1488 2925 2925 2925 3161 3391 6880	3rd, 3rd, 3.4, 8.4(
S & C	Third Gear (Lb.)	\$550 9070 15105 26000	2190 7750 10000 12290	5350 7550 11960 21000 30900	2924	1		4348 4467 5721 17000 17000 26600	2279 2614 4010 4010 2800 5322 5708 8754 11788	to each 777; 8th, 7; 8th, 7; 3rd, 5; 3rd, 5; 3rd, 230; 3 2.40; 6th, Co.
MAXIMU AT NOF	Second Gear (Lb.)	7830 13410 21735 47000 35900	3580 9000 11750 14400	6930 10900 17720 30900 44600	3964	*****		6618 6635 8404 16200 21000 32237	3520 3951 3951 5620 4520 7831 8310 13135 18513	
MA	First Gost (Lb.)	12640 20470 33100 70000	3690 15860 20700 25400	9550 17000 25900 39150 54200	4862	1	-	8714 8769 11720 20500 27500 41130	4986 5124 6625 6780 6500 10399 11333 17218	9—Independent power 18—Eth, 10980; 7th, 60, 61, 10980; 7th, 60, 61, 62, 61, 62, 61, 63, 61, 62, 61, 61, 61, 61, 61, 61, 61, 61, 61, 61
	No. of Reverse Speeds		-4444	-4400		04	60			th, 10 th, 10 th, 5.5 th, 6.60, or hold ad re 4th, detri
	No. of Forward Speeds	222	88888		44	86 2	63	287888	440004444	
RATING	Drawber	25.20	37.0	255238	2 24.12	F		1138824	7 24.06 0 37.00 0 37.00 0 37.00 0 37.00 133.02 133.02	22 42
\$	1jeg	225.00		57.00 85.00 128.00	29.72	143.00	42124	50.64 64.48	26.47 27.33 44.00 44.00 66.27 68.98 104.64	d, 3.74; d, 4.00; 7.80.
	MAKE MODEL	HD-6 HD-11 HD-16A-D HD-16AC-DC HD-21AC	310 G610, G600 D610, D600 810, 800	280000	430-C 440-IC	105	TC-12	10-6 TD-9 TD-18 TD-20 TD-24 TD-24 TD-24	005-4-30 005-4-30 005-80 005-80 005-120 005-120 005-120 005-180	ABBREVIATIONS  1—2nd reverse speed, 3.50; 3rd, 4.40. 3—2nd reverse speed, 3.51; 3rd, 3.74; 4—2nd reverse speed, 3.53; 3rd, 3.74; 4—2nd reverse speed, 3.50; 3rd, 4.00; 5—1 red for all reverse 4—2nd reverse speed, 4.00; 3rd, 7.80. 6—2nd reverse speed, 4.00; 3rd, 7.80. 6—2nd reverse speed, 4.00; 3rd, 7.80.
	-	Alde-Chalmers	Case	Caterpillar	John Deere	Elmco	Euclid	International	Oliver	ABBREVIA 1—2nd riverse speed, 3 2—With torque conver 3—2nd flivering, speed 4—2nd flivering, speed, 4—2nd flivering, speed, 4—2nd for all reace, 6—2nd reverse speed, 6—2nd reverse speed, 6—2nd reverse speed, 6—2nd repring

### Powered Rollers - EQUIPMENT SPECIFICATIONS

# POWERED ROLLERS

		Turning Radius (FL)	2000 2000 2000 2000 2000 2000 2000 200	19'6" 21'0" 19'6"		12.0	2011 CATO
-		Ground Clearance (In.)		2000	222222222222	555500	**************************************
		Height Seemed Change	22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2222	222222222222222222222222222222222222222	888888	5588888888888
S	all (In.)	WPIA	88888888888888888888888888888888888888	2008	\$2888888888888888888888888888888888888	333311	220888888888888888888888888888888888888
DIMENSION	Overall	reuttp	778 220 220 220 220 220 220 220 220 220 220	177.5 192 10 177.5 10	127 173 173 196 196 174 196 175 196 175 196 175 196 175 175 175 175 175 175 175 175 175 175	- 10	78-9
DIME	(1	nl) rithiW gnillofi	222222222222222222222222222222222222222	2222	25 25 25 25 25 25 25 25 25 25 25 25 25 2	3333==	1300 1300 1300 1300 1300 1300 1300 1300
-			40000000000000000	5555	WW@@@@@@VK55	*****	33388888888888888888888888888888888888
	Rollers— Diam. x Width (In.)	Drive	48x42 53x50 63x50 60x54 60x54 60x18 60x18 60x18 60x18 69x20 69x20 69x20 69x24	4-7.80 6-7.90 4-7.50	40x38 40x38 53x50 60x54 60x54 60x54 60x54 60x54 60x54 60x54 60x54 60x54 60x54 60x54 60x54 60x54 60x54 60x54	30°, x36 30°, x36 30°, x36 30°, x36 36°, x36	36x32 46x42 46x42 46x42 46x42 46x42 60x54 60x54 60x54 60x54 60x64
	Blam. x	Guide	41350 41350 41350 41350 41354 41354 41340 41340 41340 41344 41344 41344 41344 41344 41344 41344 41344 41344 41344 41344 41344	8 7.50 15 7 7.50 15 7 7.50 15 7 7.50 15	30x38 30x38 40x50 40x50 40x50 40x54 40x54 40x54 40x54 40x54 60x53 60x23	245,x30 245,x30 245,x30 245,x30 2832 28,32	2430 2430 3340 3340 3340 3340 4086 4086 4086 4086 4086 4086 47.80.18 5.7.80.18
		<b>Eninest</b>	HILITITITITI	PPPP	AND STANDARD	WWW.	MALITATION OF THE PROPERTY OF
		Cintch—Type	*********	5555	555555555555	*****	*******
TRANSMISSION		Range in Forward Speeds (Mph)	1.13 4 88 3.30 88 3.30 88 3.30 88 3.30 89 3.77 89 3.77 89 3.77 89 3.77 1.14 4.30 1.14 4.30 1.14 4.30	2.00-13.00 2.00-13.00 2.00-13.00 2.00-13.00	.80 5.30 .80 5.30 .80 5.30 .80 5.80 .80 5.80	1.00 2.50 1.00 2.50 1.00 2.50 1.00 2.50 1.00 2.50 1.00 2.50	2.08.4.40 2.00-4.20 1.80-4.20 1.80-4.20 1.00-4.80 0.6.80 0
BANS	speeds	No. of Reverse S	***************************************	4444	*******		○ - ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
-	speed	No. of Forward S	***************************************	4444	*****		n-aanananaeee
		Max. Brake Hp. at R.P.M.	36 2200 75 1650 60 1750 60 1750 75 1650 60 1750 60 175	46 1800 39 1800 39 1800		****	12-2000 17-2000 28-2000 28-2000 28-2000 28-2000 46-2000 37-2000 87-2000 87-2000 87-2000 87-2000
		Displacement (Cu. In.)	154.0 272.0 141.6 272.0 149.9 272.0 141.9 405.9 405.9 405.9	244.0 208.0 208.0	112.0 112.0 162.4 162.4 226.0 226.0 226.0 320.0 339.0 339.0 826.0	2K2333	63.9 107.7 111.7 111.7 111.7 111.7 1162.0 1167.0 1164.0 1144.0 1144.0 1144.0 1144.0
ENGINE	-	No. of Cylinders- Bore and Stroke (In.)	4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	6-3-x448 4-3-x448 4-3-x448			
		Make and Model	VG4D 2005 2005 2005 2005 2005 2005 2005 200	F244 F244 ED206	Y112 F182 F182 F182 F228 F228 F228 F228 F	23A AENL 23A AENL TH TH	77 - 74 - 74 - 74 - 74 - 74 - 74 - 74 -
99			Ford GM	Contract	COUNTY TATE OF COUNTY	W W W W	MODO CONTRACTOR
COMPRESSIONS Ib. in. Face		With Water	1961 2661 2663 3355 3366 409 434 434 434 434 434		1963 2265 2265 2665 2665 3373 4073 6023	1301 1301 1301 1301	133 133 152 152 161 220 220 286 286 286 286 286 286 286
COMP!		Without	101 1355 1355 1877 1877 3151 328 328 328 356 356 356		1071 1381 22201 1381 22201 1983 2683 2683 42221 580	2222200	108 102 128 128 128 128 128 100 100 100 100 100 100 100 100 100 10
WEIGHTS (Lb.)		voteW driW	10062 16523 16523 16523 24283 27906 27906 19695 19696 25122 25122 25122 25122 25122 25122 25122 25122 25122 25122 25122 25122 25122 25122 25122 25122 25122 25122 25122		10510 <sup>2</sup> 12310 <sup>3</sup> 20520 20520 24177 28177 16000 27496 <sup>2</sup> 31296 <sup>2</sup> 40170 <sup>2</sup> 27020 <sup>2</sup> 30620 <sup>2</sup>	6750 8100 8100 8100	6000 6000 10350 12200 12200 17500 17600 24420 24420 21470 21470 24800
WE		Without	6948 11623 11623 16469 16469 16411 16411 16411 16411 16411 16411 20062 20062 20062 20062 20062 20062 20062 20062 20062	8460 8460 6550	6450 8250 12200 16740 16815 21140 17219 17219 17065 20900 20900 24200 32000	2800 2800 3800 4800 6325	4786 4786 7130 8000 9000 11700 17830 17830 7170 8270
		Type	Federal	THE THE	TAT	222222	
			8 - 6 Ton 6-8 Ton 6-8 Ton 6-12 Ton 10-14 Ton 10-14 Ton 10-12 Ton 11-12 Ton 1	SPR-13 SPR-13 SPR-9	3-5 Ton 4-6 Ton 8-10 Ton Std. 8-12 Ton Std. 10-14 Ton ND 3-8 Ton ND 10-16 Ton ND 10-16 Ton ND 12-15 Ton ND 12-15 Ton ND 12-15 Ton ND NO ND	91-A 91-A 92-A 38T 38A	2.3 Ton 3.8 Ton 3.8 Ton 4.6 Ton 4.6 Ton 6.12 Ton 10 Ton 12 Ton 12 Ton 12 Ton 12 Ton 12 Ton 12 Ton 12 Ton 12 Ton 12 Ton 13 Ton 14 Ton 15 Ton 16 Ton 16 Ton 17 Ton 17 Ton 17 Ton 18
	MAKE	MODE	Austin-Western	Brewning	Suffalo-Springfield	H 4 E	upenika

Continued on next page. For references and abbreviations, see page C30

# POWERED ROLLERS-continued

71770 7770 7770 7770 7770 7770 7770 777	203333333333333333333333333333333333333	20.3° 20.3° 19.10° 16.0° 17.0° 18.0°	0.0000000000000000000000000000000000000	20.00	
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######################################	22288888888	222522RR	EEE88228	2222	tandem erter. r.
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208 208 208 208 208 208 190 190 190 190 190 190 190 190 190 190	2005	187 205 145 169 219 219	284 276 278 278 278 297	7255	T-Then
252222222222222222222222222222222222222	28822EEEE	33335CR8	2888888	2222	11113
88.423 88	48x42 53x50 53x50 60x54 69x20 69x20 69x20 69x20	52x50 52x50 60x54 46x18 48x18 55x18 60x20 69x20	2-15.00 26 2-15.00 26 2-15.00 26 2-15.00 26 2-15.00 26 2-15.00 26 2-15.00 26	5-7.50 15 6-7.50 15 6-7.50 15	roll.
64 x 64 64 x 64 64 64 x 64 64 64 x 64 64 64 x 64 64 64 x 64 64 64 x 64 64 64 64 x 64 64 64 64 64 x 64 64 64 64	34x40 40x50 40x50 40x54 48x54 48x64 44x44 44x44 44x44	40x50 40x50 45x54 32x34 36x36 38x40 42x44 44x44	87.50 15 87.80 15 87.80 15 87.50 15 87.50 15 87.50 15 87.50 15	4-7.50 15 4-7.50 15 6-7.50 15 5-7.50 15	andem.
HILIMININININININININININININININININININ	HILITITITE	TITITITI		HILL	Optional Portable t Rubber ar Rubber ti
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180 8 88 80 80 80 80 80 80 80 80 80 80 80	50.5.00 50.5.75 50.5.75 50.5.75 60.5.75 60.5.75 60.5.75 60.5.75 60.5.75 60.5.75	1.00 6.00 1.00 6.00 1.25 8.00 25 8.00 25 8.00 25 8.00	1.80-17.00	2.50 12.90 2.50 12.90 3.00 22.90 3.00 22.00	Co.
		444-0000	000	0000	Harvester ( Moline Co
		44440000	222	0000	al Har
************************	-88FF 55555 55555	8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	49-2000 52-65-	41 2200 37 2000 66 2200 60 2000	Hyd—Hydraulie. Int—International Hame—Mechanical. Mec—Mechanical. MM—Minneapolis M.
244.0 2244.0 2244.0 2244.0 2244.0 2244.0 2242.0 182	133.0 173.0 173.0 226.0 226.0 339.0 339.0 339.0	280.0 280.0 280.0 123.0 175.0 280.0 280.0	175.0 193.0 281.0	144.0	Mee
	4 3 3 4 4 4 4 3 3 4 4 4 4 4 4 4 4 4 4 4	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	4 30 km 4 4 5 km 4 4 5 km 4 km 4	4-3/5x3% 6-3%x4	Corps
FA244	1XB G0173 G0173 G0226 G0339 G0339 G0339 G0339	G0260 G0280 G0280 U123 U175 G0260 G0260	350 350 mal mal mal	Sup. 66 Ind. HC Sup. 86 Ind. D 880HC 880HC	Cont—Continental Motors C. FC—Fluid coupling. Fr—Friction. GM—General Motors Corp. Her—Hercules Motors Corp.
Cont. Cont. Vis.	IIIIIIIIIIIII	TITE TITE	Int Int Optional Optional Optional Optional	8888	Cont FC-F
462 418 551 668 338 338 338 178 277 277 277 277 277 277 277 277 277 2	160 214 278 278 326 443 519	260 267 267 280 290 337 432	*******	2542 2542 2572 2573	
250 250 250 250 250 250 250 250 250 250	97 185 185 240 240 343 471 471 469	122 210 210 181 141 155 223 260 352	2222222	83388	Orb.
28120 30110 32000 18675 199300 20750 21425 112060 17650 21426 17650 21426 17650 2781	10510 17300 20380 24089 27406 25920 28950	16150 16100 24035 10000 11900 15585 16107 24364	38000 39000 38000 38000 38000 54000 60000	18300 <sup>2</sup> 18300 <sup>2</sup> 22600 <sup>2</sup> 22600 <sup>2</sup>	4—Or equal.  5—With 20 inch rolls.  6—With steel tires.  83—Briggs & Stratton Co.
21250 20600 21740 24160 24160 24160 25350 14425 14425 14425 14425 14425 14625 16725	6790 112260 116260 116164 20200 20200 24200 28200 281120 251150	10200 16300 7600 8900 16107 20328	12350 14500 14500 12500 12800 19800 19400	6400 <sup>2</sup> 6400 <sup>2</sup> 8200	*—Or equal.  *—With 20 in  *—With steel  BS—Briggs &  Cal—Caterpil
WITH MATTER STATE OF THE STATE	attent with water	nattan MTTW WT WT	RAS RATE	FFFF	
Gallen Chief 10 /13 Ton 20* Chief 10 14 Ton 24* Chief 12 15 Ton 20* Chief 12 15 Ton 20* Chief 12 15 Ton 20* Chief 12 16 Ton 20* Chief 12 16 Ton 20* Chief 12 16 Ton 20* Warrior 7 Ton 18* Warrior 7 Ton 18* Warrior 8 Ton 18* Warrior 8 Ton 18* Warrior 8 Ton 20* Warrior 8 Ton 20* Warrior 8 10 Ton 20* Warrior 9 Ton 20* War	Huber-Warco R-7910   R-8710   R-8710   R-8810   R-8810	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Seaman-Gunnison 619 F 69-D F 78-D F 7	7 ampo	ABBREVIATIONS 1—Drive roll. 2—With wet sand ballant. 3—Drive roll with wet sand ballant.

# AIR COMPRESSORS

### Air Compressors - EQUIPMENT SPECIFICATIONS

				COMPRESSOR	SSOR					ENG	ENGINE				2	CAPACITIES	cen to t	TIRE SIZE	SIZE	DIN	DIMENSIONS	Z
2 2			Bore and	Stroke	isd O			Aji			lers,		(ni.	chm								
MODEL		No. of Cylinders	High Pressure Cylinder	Low Pressure Cylinder	Air Delivery (c. 10 cu. ft./min.)	Ocerating Pressur	Maximum Discha Pressure (lb.)	Air Storage Capac	Type	MAKE AND MODEL	Number of Cylinc Bore and Stroke	Horsepower at	Displacement cu	Governed Speed	Crankrase Qt.)	Radiator (Qt.)	Fuel Tank (Gal.)	Front	Rear	('ul) ujšua-j	Width (In.)	
Chicago Pneumatic	75-PG-20 125-RG-2 250-RG-2 250-RG-2 365-RO-2 365-RO-2 365-RO-2 365-RO-2 365-RO-2				75 250 250 250 365 800 900	255555		41,111	0000000	Her G0198A Her G039A GM 4-53 GM 4-71 GM 8-71 Cum NRTD681	4464460									116151 1501 177141 159152 174152	52.41 688.41 688.41 771.52 781.52	-
<b>Б</b> ачеу.	75-WBD 125-VD 126-WDS 210-WDS 315-WDS 600-RP	~~E~~~E	73,1443/2 6x3/1, 7x3/1, 6x4	48,x41/2 51,x33, 51,x4	125 1125 210 210 800	8888888	128 128 128 128 128	- 6.5.8.8.5.8. 8.6.8.8.8.0.0	0000000	Wis VG4D  Her G0198A  Her G0198A  Her G0198A  Her G198A  ACLO  844	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		154.0 233.0 198.0 236.7 338.0 529.0 844.0	1830 1830 1800 1600 1600 1760		18 18	8999998	6.00 16 6.00 16 6.00 16 6.00 16 7.50 16	7.50 16	72 128 147 147 192 192	48 533/2 75 75 78	
Gardner-Denver	RP-125 RP-365 RP-600 RP-900	0000			125 800 800 800	0000	13.15	8.07.0	9000	Her DD198 GM 4-71 GM 6-71 GM 6-710	4400	53 162 248					92 00 0			128 122 144 168	28 90 96	
Ingersell-Rand	GR-85 GRA-125 GRA-125 DR-250 DR-600 DR-600				125 250 365 900	888888		24.0 17.0 24.0 24.0	000000	Cont F140 Cont G193 GM 4-53 GM 4-71 GM 6-71	6 4 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		140.0 193.0 212.0 284.0 425.0 660.0	2100 1800 1800 1800 1800	44 55 28 24 55 28	25 25 36 112 144	14 33 33 44 144	5.00 15 6.70 15 7.50 181 7.50 16 7.50 20	6.70.152 8.50.16 7.50.16	671,5 701,5 935,5 124 1535,	30% 5 32% 5 381, 5 68 71 811,5	428 80 82 108 108
Jaegor	75 88 88 125 250 250 250 365 600	****			75 1125 250 250 365 800	9989999	125 125 125 125 125 125	20.00.00	0000000	Cont F140 Cont F286 Cont F286 Cont B427 GM 4-77		33 37 95 105 175	140.0 162.0 226.0 427.0 213.0 284.0 426.0	2100 2100 1700 1700 1700 1700	4407278	13 52 52 52 52 53 54 55	38 38 47 85 85	5.50 15 6.00 16 7.50 16 9.00 16 7.50 16 7.50 16	9.00 16 7.50 16 7.50 16	1108 135 1593 155 155 155 155 155	58 60 60 72 74 72	
	RP-125 RP-250 RP-260 RP-600 RP-900	***			125 250 365 800 900	88888	125		08000	Cont 60339 GM 6-71 GM 6-71 Cum NRTO6					28228	2222	150000			123 101 178 141	63 74 76 81 81 83½	
Quincy	7-216 7-240 7-244 7-256 7-316 7-326 7-326 7-340	~~~~~	200 mm	3x2\2 3x2\2 4x3 4x3 4x3\2 4x3\2 3\2x2\3 6x3\2 6x3\2	33 25 23 25 23 25 23 25 25 25 25 25 25 25 25 25 25 25 25 25	55 55 55 55 55 55 55 55 55 55 55 55 55	2000 2000 2000 2000 2000 2000 2000	aninininini	00000000	WIS   BKN	2 2 3 2 3 2 3 2 3 2 3 3 3 3 3 3 3 3 3 3	*********	23.23.23.23.23.23.23.23.23.23.23.23.23.2	2750 2750 2750 2200 2200 2750 2200 2200	2242 224	~~~~~~		5.50 16 5.50 16 5.50 18 5.50 18 5.50 16 5.50 16 5.50 16		88377 837 837 837 837 837 837 837 837 83	22222222	
Schramm	28 28 173 173 280 280 280 280 280	~~~~~		3x31, 3x31, 3x31, 41,2x4, 41,2	2255 235 235 235 235 235 235 235 235 235	808899998	*******	2444447758 2444460000	000000000	COUP Cown COUP Cown COUP Cown COUP Int UD14A	2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	552448858	226.6 226.6 226.6 226.6 461.0 891.0	1800 1470 1370 1350 1350 1180	322000055	281.2 36 36 57 143 200	28 28 28 28 28 28 28 28 28 28 28 28 28 2	5.90 15 6.90 15 6.50 16 6.50 16 6.00 16 6.00 16 9.00 16	6.00 16 6.00 16 7.50 16 9.00 16	361-5 361-5 665 825 825 1385 1385 1045 2035	265 275 275 275 275 485 605 725	
Worthington	822			- 0.0	885	888	222	200	000	Cont FA162 Her JX4D Her DD198	4-3/11485 4-4141, 4-4145	222	162.0	1800	*****	988	20 02	6.40 15 6.00 16 6.00 16		121 % 1 1274 1 1274 1	1 1 1 1 1	

0	MAKE Bore and Stroke	MODEL Mo. of Cylinders High Pressure Cylinder	Worthington Cont'd 175 R 210 R 210 R 315 R 315 R 315 R 315 R 315 R 315 R 800 R 800 R 800 R	ABBREVIATIONS 3—Continental GD-193 savaliable.
COMPRESSOR		Low Pressure Cylinder Air Delivery (r. 10 (cu. ft./min.)	2210 2210 2210 2210 23133 23133 23133 23133 23133 23133 23133 231 231	GD-193 Diesel engine
	(dl) 91	Usessiff gnilaredO	900000000	
	961	Maximum Discha	125 125 125 125 125 125	20 00
	Aşi	Air Storage Capai (cu. ft.)	28800044	Skid mounting. Hercules DD-339
		Type	00000000	pting.
ENC		MAKE AND MODEL	Her JX4D  Cont M330  GM 4-51  GM 4-51  GM 8-71  Cum NHC400  Cum NHC400  6-71  MM 6-70  MM 6-70  MM 7-70  MM 7-7	39 Diesel engine
ENGINE	in.)	Number of Cylind Bore and Stroke	4040400 44440040 4444440	AC Allis-Chalmers
		Horsepower at Coverned Speed	53 78 78 120 120 180 203	almers.
	('uj	Displacement cu		
	(mda	Coverned Speed	1800 1800 1800 1800 1800	
CAP		Crankcase (Qt.)	284443965	G Gasoline
CAPACITIES		Radiator Qt.	468888888	asoline.
· ·		Fuel Tank (Gal.)	20 335 6.00 35 6.00 50 6.50 50 6.50 6.50 7.50 7.50	Diesel
TIRE SIZE		Front	222222	
ZE		Real	6.00.16 6.50.16 6.50.16 7.50.16 7.50.16	Int In
ONIO		Length (In.)	38 11112 1292 1377 1522 1522 1633	International
OVERALL		Width (In.)	28 622 7722 7723 822	II.
LL			#KK29288	

Height In.

25 FF F 23 20

### The Manufacturers . . .

### Continued from page C1

International Harvester Co., Construction Equipment Division, P. O. Box 270, Melrose Park, Ill. (Engines, Front End Loaders, Crawler Tractors, Scrapers)

Jaeger Machine Co., 550 West Spring St., Columbus 16, Ohio.

Kenworth Motor Truck Co., 8801 East Marginal Way, Seattle 8, Wash. Koehring Co., 3026 West Concordia Ave., Milwaukee 16, Wis. KW-Dart Truck Co., 2623 Oak St., Kansas City 8, Mo.

LeRoi Div., Westinghouse Air Brake Co., Milwaukee 1, Wis. LeTourneau-Westinghouse Co., Peoria, Ill.

Mack Mfg. Corp., 1355 West Front St., Plainfield, N. J.
Marmon-Herrington, Inc., Indianapolis 7, Ind.
Michigan, see Clark Equipment
Minneapolis-Moline, Minneapolis 1, Minn.
Mixermobile Manufacturers, Inc. (Scoopmobile), 9027 North East Killingsworth St., Portland 20, Ore.

The Oliver Corp., 300 Lawler St., Charles City, Iowa (Engines)
The Oliver Corp., Cleveland 17, Ohio (Front End Loaders, Crawler Tractors,
Scrapers)

Oshkosh Motor Truck Inc. 2300 St. Oshkosh Wis

Payloader, see Frank G. Hough
Peterbilt Motors Co., 107th Ave. & MacArthur Blvd., Oakland 5, Cal.
Pettibone Mulliken Corp., 4700 West Division St., Chicago 51, Ill.
P&H Diesel Engine Div., Harnischfeger Corp., 500 South Main St., Crystal
Lake, Ill.

Quincy Compressor Co., 217 Main St., Quincy, Ill.

Reo Motors Div., White Motor Co., 1331 South Washington Ave., Lansing 20, Mich.
Roiline, see Waukesha

Schramm, Inc., West Chester, Pa. Scoopmobile, see Mixermobile Manufacturers Scaman-Gunnison Corp., 2763 South 27th St., Milwaukee 15, Wis. Shovel Supply Co. (Ferguson), P. O. Box 1369, Dallas 21, Texas

Tampo Mfg. Co., P. O. Box 2340, San Antonio, Texas Tractomotive, Deerfield, Ill. Trojan, see Yale & Towne Truckstell Mfg. Co., Cleveland 14, Ohio

Walter Motor Truck Co., Ridgewood, Long Island, N. Y.
Ward LaFrance Truck Corp., Elmira Heights, N. Y.
Waukesha Motor Co. (Waukesha, Roiline), West St. Paul Ave., Waukesha, Wis.
Wisconsin Motor Corp., Milwaukee 49, Wis.
Worthington Corp., Holyoke Div., Holyoke, Mass.

The Yale & Towne Mfg. Co. (Trojan), Batavia, N. Y. Yuba Mfg. Co., Benicia, Cal.

### Construction equipment

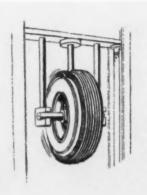
is expensive. For just major pieces of equipment the Industry Division, Bureau of the Census, reports you spent \$885,771,000 in 1958...a "king size" total. As COMMERCIAL CAR JOURNAL begins the third year of this special construction equipment maintenance section, we hope you find it a help in getting the most out of this high cost investment.

Du Pont, pioneer producer of both nylon and rayon tire yarns, reports to truckers:

HOW



### CORD SOLVES 8 MAJOR TRUCK TIRE PROBLEMS



Problem #1
IMPACT BREAKS

Nylon's amazing strength helps prevent impact failure.



A standard laboratory test of comparable first-line nylon and rayon cord tires, called a plunger energy test, demonstrates it takes an average of more than 20,000 lbs. to rupture nylon cord tires, and an average of only 15,000 to rupture tires made with the best rayon...a more than 33% plus for nylon. • Record: kept by

F. J. Boutell Driveaway Company showed that 28.6% of all its rayon tire failures over a three-year period were due to impact breaks. The company reports no failure of its nylon cord tires due to this cause over the same period of time.

Problem #2

### **HEAT DAMAGE**

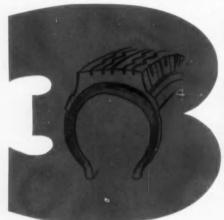
Nylon cord tires have greater heat resistance.





Nylon tire cord exposed at  $212^{\circ}$ F. for thirty days retained 72% of its original strength. The best viscose rayon tire cord exposed to the same temperature for the same period of time kept only 30% of its strength.  $\bullet$  The strength loss caused by high temperature is

a permanent loss. Because of nylon's greater resistance to heat damage, truckers all over the country are finding they get fewer premature failures, more retreads with nylon.



Problem #3

### **PLY SEPARATIONS**

Nylon has greater resistance to ply separation.



Ply separations are one of the major causes of premature tire failure. Ply separations can be caused by heat damage and flex fatigue. Nylon cord has greater resistance to both of these tire enemies. Pacific Intermountain Express participated in a con-

trolled fleet test that demonstrated that ply separations were the cause of half of all viscose rayon cord tire failures , . . accounted for only  $12\,\%$  of nylon failures.



Problem #4

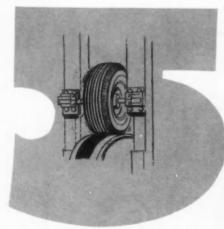
### MOISTURE DAMAGE Nylon retains

strength when wet, is virtually unaffected by mildew and rot.



Laboratory tests show that even when soaking wet, nylon retains 87% of its original strength. Rayon, when wet, drops to 55% of original strength. Also, continued exposure to dampness can rot any type of rayon cord, but not nylon. ● Arkansas-Best Motor Freight uses nylon cord tires to combat strength loss due to mois-

ture and rot. Small cuts and cracks allowed moisture to get into the cord body. This weakened and finally destroyed the rayon tires. Switching to nylon cord tires solved the problem, eliminated the need for spot repairs, adding further to dollar savings.



Problem #5

### **OVERLOADED TIRES**

Nylon's greater strength means higher pay loads.



In a test that gradually increases the load, tires are run to failure on a standard test wheel. Nylon cord tires on the average withstood 150% of rated load while all the comparable rayon cord tires failed at 130% or less. • When C & E Trucking, New York

State milk haulers, changed from rayon to nylon, they were able to use a tire two sizes smaller. The change allows them to carry 400 lbs. more pay load per trip. In addition, C & E gets 30% more total mileage with the lighter, smaller nylon cord tires.



Problem #6

### LOW MILEAGE Nylon's lasting strength means greater retreadability, more mileage.



Higher impact strength, greater heat resistance, fewer ply separations, less moisture damage, all add up to tougher, longer-lasting carcasses that can be retreaded again and again.  $\bullet$  The accumulated records of many trucking fleets show that  $32\,\%$  more nylon

carcasses than rayon carcasses are retreadable after the original tread is gone, and that nylon cord tires average twice as many total retreads as rayon. For example, Herrin Transportation Company gets  $43\,\%$  better total mileage with nylon through retreading.



Problem #7

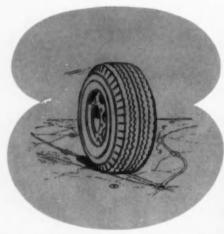
### HIDDEN COSTS

Nylon tire cord offers truckers other pluses.



Nylon's great strength and durability have helped to solve many of the problems peculiar to a particular fleet or type of trucking operation. ● Nylon cord tires help cut down time on equipment, lower repair costs of tires, and reduce tire inventories. Because

nylon cord tires are softer riding, they reduce shock on truck and cargo and cut down on driver fatigue. In addition, and perhaps most important, nylon cord tires provide greater safety through extra blowout protection.



Problem #8

### HIGH COST PER MILE

Nylon cord tires give lowest cost per mile.



Although the initial cost of nylon cord tires is more than the cost of viscose rayon cord tires, the mileage accumulation in original tread and through retreading more than compensates for the dif-

ference in purchase price. • After a closely controlled test, the Pacific Intermountain Express Company reported a 12% saving in tire cost through the use of nylon cord tires.

**TO SUM UP:** Fleet tests and the actual operating experience of truckers all over the country confirm laboratory tests clearly proving the superiority of nylon cord truck tires.

You can reduce your costs and increase operating efficiency with nylon cord tires. Change to nylon now!

THE SAFEST, STRONGEST

TIRES ARE MADE WITH

NO



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

### Where the Shift-Ratio Per Mile Is High, the shift is to LIPE CLUTCHES



Stop-and-go...creep-and-crawl...uphill-downhill...wherever the overall frequency of shifting is high, it's hard to keep clutch maintenance costs low. Fleet operators know it's not the number of miles per year that put a clutch to the cost test. It's the number of engagements per mile.

That's why so many operators are converting entire fleets to Lipe Heavy-Duty DPB Clutches...both on new trucks and as replacements of original equipment.

All over the country, with fleet owners who watch their costs most closely

... the trend is to LIPE!



For more ton-miles and more engagements between shop-stops, equip with Lipe Heavy-Duty DPB Clutches: single and two-plate types; 12", 13", 14" and 15" sizes; torque capacities from 300 to 1900 ft.-lbs.



### **1959 Truck Specifications**

### KEY TO DEFINITIONS

### MAKE AND MODEL

Only Domestic Truck Models are listed.

### OPTIONAL UNITS

For the express purpose of best fit-ting the truck to the individual job most of the models listed can be pro-vided with optional engines, trans-missions, axies, etc., and these mod-els when so equipped are considered standard stock models.

### RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published here-with are those supplied by manufac-turers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manu-

facturer may either increase or defacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

### CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

### STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

### MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is The are size asted in this continuity is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is Turnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

### MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based,

### MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

### MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamom-eter reading without accessories.

### GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

### TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

### KEY TO ABBREVIATIONS

### MAKES-ALL

All-Allison Div., General

Motors Corp.

B—Bendix.

BL—Brown-Lipe.

Bu or Bud—Buda.

BW—Bendix-Westing--Chevrolet.

C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cu or Cum—CumminsDiesel.
Deu—Deutz Air Cooled
Diesel engine,
Eat—Eaton.
F—Ford.
Fu—Fuller.

G-H-Goodyear-Hawley

type. GMC—General Motors

Corp. H—Hotchkiss. Her—Hercules. HS—Hall-Scott.

-International

Harvester.
L—Lockheed.
LeR—LeRoi.
LH—Lockheed front.
Wagner "hi-Tork" rear.
LT—Lockheed type front

Timken rear. LW-Lockheed front,

Wisconsin rear.
M—Midland.

O or Ow-Own. Op or Opt.—Optional. Shu—Shuler.

Shu-Shuler.
Spi-Spicer.
T or Tim-Timken-Detroit Axle Co.
Tw-Timken-Detroit—Westinghouse.

-Timken-Detroit-

Wis Wisconsin.
Var—Variable.
WG—Warner Gear.
Wau—Waukesha.
Wiscon

Wau—Waukesha. W or Wis—Wisconsin. W-B—Wagner or Bendix.

WE-Wagner Electric. Wg-Wagner "hi-Tork."

Ws-Westinghouse.
WW-Westinghouse or Wagner.

### REAR AXLE

Final Drive and Type

inal Drive and Type
B—Bevel.
CD—Chain Drive.
F—Full-floating.
H or Hy—Hypoid.
d—Dual range axie.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
4—Three Quarters
Floating.

Floating.
4—Semi-Floating.

T-Full-floating, randem drive.
P-Planetary.

### GEAR RATIOS

(\*\*)—Only one ratio.

Drive and Torque

H—Hotchkiss (springs)
R—Radius Rods.
L—Parallel Torque Rods.
T—Torque Arm.

### GOVERNOR STANDARD

### KEY TO REFERENCES

### e.f.—Cab Forward design. c.o.o.—Cab-Over-Engine design. l.c.f.—Low cab forward design. (D)—Diesel-engine equipped. (T)—Designed for tractor use only.

use only.

(C)—Ford or Chevrolet Models,

Models,

(R) — Remanufactured
Fords.

- Denotes "Includes Cab"
when used with
weights or prices.

### CHEVROLET

†—283 V-8 Trademaster engine available. ††—283 V-8 Taskmaster engine available. 4—283 V-8 Super Task-master 4 barrel car-bureter gering available. huretor engine avail-

able

able.

Overdrive optional.

Overdrive optional.

Heavy duty 3 speed transmission available.

speed transmission available.

Hydramatic available.

Hydramatic available.

Hydramatic available.
 Speed New Process transmission available.
 Powermatic available.

\*—Front only; rear, 10/22.5D. 4—283 V-8 Super Turbo-Fire 4 barrel carburetor engine available.

ensine available.

-4.11 with overdrive;
3.36 with Powerglide transmissions.

1-3.70 available.

-1-17 available.

-1-17 available.

-1-18 v.s. Workmaster.

348 V-8 Workmaster Special engine available

able.

5 speed close ratio
Spicer available.

Clark 5 speed available.

3.92 ratio Positraction
available.

### COLEMAN

\*—11.00/22 also available.

"—Fu5A65 or Spicer 6352 also available.

†—Cum HRB600 also

available with he power of 165-1800.

\*-Front only; rear, 7.50/

+-Front only; rear, 7.50/

\*—Front only; rear, 8.25/ 168. \*—Front only; rear, 7.50/ 20D.

### DUPLEX

1—Torque Divider, Timken T70-2 speed.

### FABCO

\*-With 2-speed transfer

case.
With 3-speed auxiliary
and 2-speed transfer

case.

-Chevrolet axle remanufactured.

-Ford axle remanufactured.

### FEDERAL.

\*-Also available with tandem rear axle

\*-Other options available.

\*—Models available with tilt cabs.

### KENWORTH

++-Timken TK-500 PA
Trailing Axle.
+-Both C.O.E. and cab
beside engine optional.
--And 8031.

### MARMON-HERRING-TON

\*—Three-speed trans. opt.

\*—Torque converter available.

\*—PM477HD and

EDN534 engines available.

### MONTPELIER

\*—Complete vehicle. \*—Hercules CV4-180 engine available.

### OSHKOSH t-14.00/20 front.

4-Model OA-145 and OA-

Model OA-145 and OA-142 LPG engines can be furnished.
 Two speed axie available.
 Model OA-100 LPG or OA-130 engine can be furnished.
 OH-160 LPG or OH-160 LPG or OH-160 LPG or OH-160 LPG

185 engine can be

185 engine can be furnished

-Includes cab, fuel, oil, water.

-Cummins HRFB, NH95, NH220, NTO, GM 6-71 engines can be furnished.

be furnished.

"Model OV8235 or OV220 LPG engine can
be furnished

OH-170, OA-142 LPG
or OH-160 LPG or
OH-185 engine can be
furnished.

"OA-145 or OA-142 LPG,
OH-160 LPG or OH185 engine can be
furnished.

"Rear only: front.

### •—Rear only; front, 11.00/20.

STUDEBAKER

### Two speed 5.93-8.10 or 6.48-8.86 optional. Two speed 6.16-8.48 or 6.61-9.09 optional.

### TRUCKSTELL

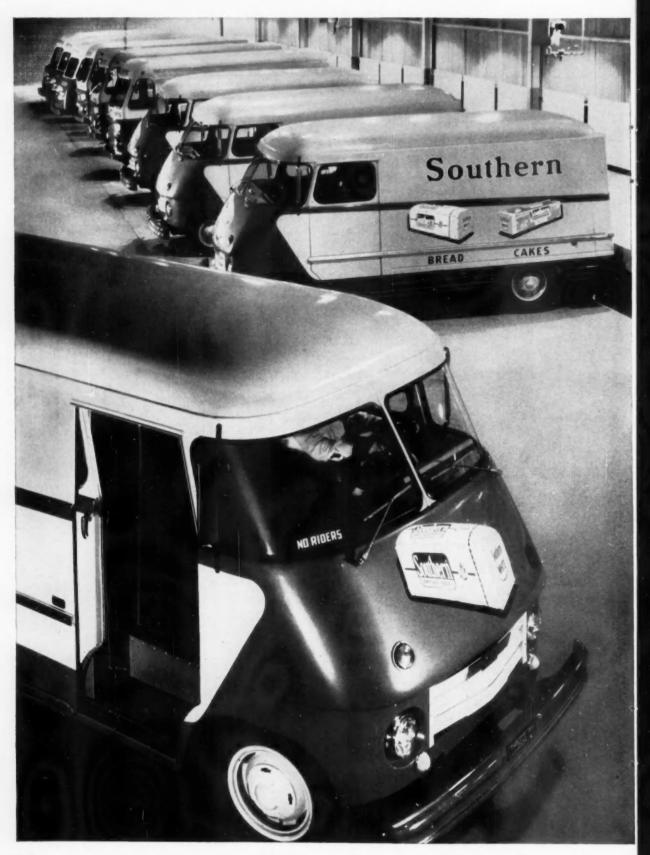
++-With 3 speed power divider.

Weight with cab and maximum tires.

### WILLYS

\*-Overdrive optional.

	WHEEL- BASE			TIRE	SIZES		ENGINE D	ETAI	LS			TRANSMISSIO	N	F	EAR A	KLE	
MAKE		cle Weight Service	_		al rear gle rear								100			9	-
MODEL	Minimum Standard Maximum Standard	Grass Vehicle for Normal Ser	Chassis Weight (See definition)	Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Geer Ratio Range in High
(i.c.f.) 5.D39 (i.c.f.) 6.D39 (i.c.f.) 7.D39 (i.c.f	104 125 137 128 138 138 138 139 150 150 150 150 160 160 160 160 174 174 176 176 176 176 176 176 176 176 176 176	4900 4900 5000 5000 10000 6900 9900 14000 15000	3750 3750 3055 3130 3055 3130 3055 3130 3055 3130 3055 3130 3055 3455 5295 3455 525 5000 5125 5000 5000	8.00 / 14\$ 8.00 / 14\$	8.50/14S 5.50/14S 6.50/14S 6.5	O-Hi. Thrift. O-Turbo-Fire O-Turbo-Fire O-Turbo-Fire O-Tir. Maa. 5 O-Tir	8.3 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	283 2833 2833 2611 2611 2611 263 263 283 283 283 283 263 263 264 265 266 266 266 266 266 266 266 266 266	8.38.338.338.338.338.338.338.338.338.33	2775 2177 2177 2177 2177 2177 2177 2177	135 4000 135 4001 150 4000 150	Own   1	232333344444444444444444444444444444444	Own Own Own Eaton Eaton Eaton Eaton Eaton Own Own Own Own Own Own		H	*.3.** *.3.** *.5.* *.5.* *.6.* *.7.* *
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COMMERCIAL CAR JOURNAL, July, 1959

### Chevy outsaves other makes by 20% in 800-truck bakery fleet

# "Univac says it and I'll say it too. Chevrolet is our kind of fleet vehicle!"

-OGDEN A. GEILFIJSS, PRESIDENT SOUTHERN BAKERIES COMPANY, ATLANTA, GEORGIA.



"We work our trucks hard, delivering fresh bread and baked goods to all sections of the South, six days a week. Our Chevrolet forward control models are on the go 10 hours a day and average 78 stops along their routes. With a gas bill that comes to more than a million dollars a year, it pays us to stay on top of expenses every mile we haul. Our Univac machine says it and I'll say it too: Chevrolet is our kind of fleet vehicle. Our business demands Chevy's brand of economy."

Faced with the daily chore of getting fresh bread out to millions of consumers from Washington, D.C. to Key West, the Southern Bakeries people make stern demands on their trucks. And they get what they need from Chevrolet forward control models equipped with Thriftmaster Special 6, heavy-duty 3-speed transmission and heavy-duty clutch. The bakery's Univac machine, which keeps an accurate check on truck operating costs, reports that the Chevies are giving outstanding gas mileage . . . 2.1 more miles per gallon than other makes in the fleet!

This is a 20% advantage in fuel economy that adds up to a big saving over a year's time—and the dependability of the Chevrolet units has proved equally beneficial. The bakery discloses that it used to maintain many spare trucks to replace trucks which were down for repairs. But the reliability of the newer Chevy units, they report, has enabled them to eliminate many of the "spares"; to save much of the money they formerly spent on standby vehicles.

Chevy, you'll find, is winning a lot of new boosters among fleet owners, for a number of good reasons. Reasons like the newly improved valve-in-head 6's that nurse a gallon of gas like nothing in trucks has before. Or the big V8's for every Series that include the shortest stroke design—the best saving design—in the field. And for the toughness that leads to low maintenance, Chevy's advanced chassis components are specially designed for the capacity to outmuscle the roughest kind of runs. See your Chevy dealer soon! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

Univac is a registered trade mark of the Sperry Rand Corp.

No job's too tough for a CHEVROLET



### 1959 TRUCK SPECIFICATIONS

Continued from page 123

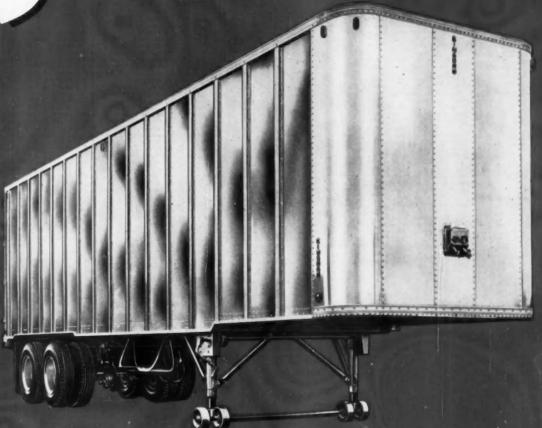
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MAI	KE		-	Weight		D-du S-sir	ial rear igie rear											8	
MOD	D	Minimum Standard	Maximum	Gross Vehicle V	Chassis Weight (See definition)	Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
(c.e.e.) (c.e.e.) (c.e.e.) (c.f.) (c.f.) (c.f.) (sc. Bus) (sc. Bus) (sc. Bus) (sc. Bus) (sc. Bus) (sc. Bus) (sc. Bus)	M6-D100 M8-D200 M8-D200 M8-D200 M8-D300 M8-D300 M8-D400 M8-D400 M8-D500 M8-D500 M8-D500 M8-D500 M8-D600	108 116 116 126 128 129 129 129 129 129 132 108 108 104 104 104 108 153 153 153 153 153 236 236	116 116 126 126 127 171 171 171 217 236 236 236 236 192 192 162 162 126 126 126 127 127 227 227 227 227 227 227 227 227	\$100 \$100 \$7500 9000 15000 15000 15000 22000 22000 22000 25000 9000 15000 15000 15000 15000 15000 15000 22000 22000 22000 2500		6.70/18S 6.70/18S 6.50/16S 6.50/16 7/17.5S 7/17.5S 7/22.5 8/2.5 8/2.	6.50/16S 6.50/16S 6.50/16S 8.19.5S 8.19.5S 8.19.5S 9.22.5 9.22.5 10.22.5	Own	6-31/x49/s 8-3.01/x331 6-31/x44/s 8-3.01/x331 8-3.01/x	318 230 318 231 318 251 318 251 318 354 354 354 230 318 231 318 231 318 231 318 231 318 318 318 318 318 318 318 318 318 3	7.927.927.8.217.557.557.557.557.557.557.557.557.557.5	290 202 290 216 292 228 300 319 340 360 300 300 202 292 216 292 216 292 216 292 203 203 203 203 203 203 203 203 203 20	205 - 4400 205 - 4400 205 - 4400 205 - 4400 207 - 4400 125 - 3600 207 - 4400 130 - 3600 210 - 4400 218 - 3900 224 - 3900 210 - 4400 218 - 3900 120 - 3600 207 - 4400 125 - 3600 207 - 4400 207 - 4400 207 - 4400 207 - 4400 207 - 4400 207 - 4400 207 - 4400 207 - 4400 207 - 4400 207 - 4400	Own PC WG T85E WG T85E W T85E NP 420 NP 420 NP 420 NP 420 NP 420 NP 420 NP 540 Cla 265V Cla 300 NP 540 NP 540 WG T87E WG T87E WG T87E WG T87E WG T87E WG T87E NP 420	33334444445555545533334444455	Own D100 Own D100 Spi 60 Spi 60 Spi 60 Spi 60 Own D300 Own D300 Own D400 1im F147 Tim F147 Eat 1614 Tim L140 Tim G1740 Tim F147 Eat 1614 Tim H141 Own P300 Own P400 Own P400 Own P400 Own P400 Tim F147 Tim F147 Tim F147 Tim F147 Tim H141	HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH	**************************************	4,1 -4,8 4,1 -4,8 4,1 -4,8 4,1 -4,8 4,1 -4,8 6,2 -6,8 6,2 -6,8 6,5 -7,1 6,5 -7,1
Ouplex (D)	T-308 R-427 R-450 KH K-501 L L-6602 LC-600	136 136 136 148 148 148 148 148	220 220 220 220 220 220 220	34000 37000 37000	*8820 *8850 *10500 *10500 *11300 *11650	8.25/20 19.00/20 19.00/20 11.00/20 11.00/20 11.00/20 11.00/20 11.00/20	9.00/20 11.00/20 11.00/20 12.00/20 12.00/20 12.00/20 12.00/20 12.00/20	Int BD308 Con B6427 Int RD450 Her RXC Int RD501 Her RXLD Con R6602 Cum HRB600	6-3-4x41 6-4-4x47 6-4-5x5 6-4-5x51 6-4-5x51 6-4-5x51 6-4-5x51 6-4-5x51 6-5-5x6	308 427 450 529 501 558 602	6.5 6.6 6.5 5.4 6.5	273 325 388 395 444 430 465	145-3800 141-2500 182-3000 132-2300 212-3000 154-2400 200-2800	Fu 58330 Fu 5A43 Fu 5A620 Fu 5A620 Fu 5A620 Fu 5C650 Fu 5C650	55555555	Tim H140 Tim QT340 Tim QT340 Tim U200 Tim U200 Tim U200 Tim U200 Tim U200	B Fd Fd 2F 2F 2F 2F 2F 2F	HRRRRRR	6.42-8. 6.42-8. 9. 9. 9.
(D)	200 R1 D200 R2 D200 R3 D200 R2	157 157 157 157 157	193 193 193 193 193 193 193 193 193 193	2200002 240002 240002 240000 22000000	- 4999 -	8.25/20 8.25/20 8.25/20 8.25/20 8.25/20 9.00/20 9.00/20 9.00/20 10.00/20 10.00/20 10.00/20 11.00/22		Her JXD Con TD6427 Her JXD Con TD6427 Her JXLD Con TD6427 Her JXLD Cum JN68 Her JXLD Cum JN68 Con T6427 Cum JR58600 Con L6501 Cum HRF6600 Cum NH8600 Her JXD Con TD6427 Her JXLD Cum JN68 Her JXLD Cum JN68 Cum JN68 Cum JN68 Cum JN68 Cum JN68 Cum JR58600 Cum JR5860	6-4x1/4 6-4	3200 427 329 401 339 401 427 401 501 743 320 427 401 329 401 427 401 427 401 427 401 427 401 427 401 427 401 427 401 427 401 427 401 401 401 401 401 401 401 401 401 401		254 307 254 290 356 350 356 350 350 350 350 350 413 357 254 307 264 290 264 290 356 350 350 484 484 290 356 350 484 484 484 484 535 550 487 487 487 487 487 487 487 487 487 487	125 3200 116 2400 125 3200 118 2400 138 3200 125 2500 125 2500 127 2500 150 2500 178 2600 180 2000 178 2600 180 2500 178 2500 178 2500 179 3000 180 2500 180	Cin 205V Cin 290V Cin 290V Cin 295V Cin 290V Cin	555555555555555555555555555555555555555	Tim H140 Tim H140 Tim H140 Tim H340 Tim H340 Tim H340 Tim L140 Tim L140 Tim L140 Tim L140 Tim L140 Tim L140 Tim J340 Tim U300 Tim	# # # # # # # # # # # # # # # # # # #		** 7.**  ** 8. 6. 16. 8. **  ** 6. 16. 8. **  ** 6. 6. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8.
**************************************	F-100 F-250 F-350	118 118 118 118 118 110 110	118 118 118 118 118 118 118 118 118 130 130	4600 4600 4600 4600 5000 7400 7400 7600 9800	355; 361; 347; 358; 364; 302; 302; 328; 328; 328; 328; 328; 374; 4374;	7,50/14S 7,750/14S 7,750/14S 7,750/14S 7,750/14S 7,750/14S 7,750/14S 0,670/15S 0,670/15S 0,650/16S 0,650/16S 0,650/16S 0,670/15S 0,670/15S 0,717,5S 0,717,5S 0,717,5D	8.00/14\$ 8.00/14\$ 8.00/14\$ 8.00/14\$ 8.00/14\$ 8.00/14\$ 8.00/14\$ 8.00/14\$ 7/17.5\$ 7/17.5\$ 8/19.5\$ 8/19.5\$ 8/19.5\$ 8/19.5\$	Ford EBP Ford EDB Ford EBP Ford EBP Ford EDT Ford EBB Ford EBT Ford EBR Ford EEH Ford EBR Ford EBS Ford EBS	6-35 x 3 1 8 4 x 3 6 8 4 x 3 6 8 4 x 3 6 8 8 4 x 3 6 8 8 4 x 3 6 8 6 3 6 x 3 6 8 8 6 3 6 8 7 8 7 8 8 7 8 7 8 7 8 7 8 7 8 7 8 7	292 352 293 353 223 293 223 293 223 293 223 293 223 293 223 22	2 8.8 9.0 3 8.3 7.9 3 8.3 7.9 3 8.3 7.9 3 8.3 7.9 8.3 8.3 7.9 8.3 7.9 8.3 7.9 8.3 7.9 8.3 8.3 7.9 8.3 8.3 8.3 8.3 8.3 8.3 8.3 8.3 8.3 8.3	3 285 3 380 3 212 3 285 3 380 3 207 9 269 3 207 9 269 3 207 3 207	200-440 300-460 145-420 200-440 300-460 139-420 139-420 186-400 7 139-420 186-400 7 139-420	0 Ford° 0 Ford° 0 Ford° 0 Ford° 0 Ford° 0 Ford° 0 Ford°	33333333444	Ford 3300 Spi 60 Spi 60	HIGH STATE OF THE HISTORY HIST		3.70- 3.70- 3.70- 3.70- 3.70- 3.70- 3.70- 4. -4.

For references and abbreviations see page 122

Continued on page 128



# SHULER AXLES



### THERE ARE NO BETTER AXLES, AT ANY PRICE!

Since 1915, Manufacturers of: Oce-Piecs Tubular Heavy-Duty Trailer Axles; Front Axles for Trucks, Busses, and Off-Highway Equipment; Low-Bed Machinery Trailer Axles; Heavy-Duty Vacuum and Air Brakes.

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Oakland, California Fort Worth, Texas

### 1959 TRUCK SPECIFICATIONS

Continued from page 126

	WHE				TIRE	SIZES		ENGINE D	ETAI	LS			TRANSMISSIO	NC	REA	AR AX	LE	
MAKE			Weight		D-dus \$-sing	il rear de rear											90	
MODEL	Minimum Standard	Maximum Standard	Gross Vehicle V for Normal Serv	Chassis Weight (See definition)	Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
F-600 F-600 F-700 F-700 F-700 F-750 F-800 F-800 F-100 F-1100 F-1100 F-1100 G-1100 C-1500 C-1500 C-1500 C-1500 C-1500 C-1500 C-700 C-	130 130 130 130 130 132 132 132 132 132 132 132 132 132 132	192 192 192 192 192 192 192 192 192 192	*43000 *43000 *46000 *46000	*4515.* 4870.* 4	7/22.5D 7/22.5D	\$ 22.5 \$ 22.5 \$ 22.5 \$ 9 22.5 \$ 10 22.5 \$ 11 22.5 \$ 11 22.5 \$ 11 22.5 \$ 12 24.5 \$ 12 24.5 \$ 12 24.5 \$ 12 24.5 \$ 12 24.5 \$ 12 24.5 \$ 10 22.5 \$ 10 22.5	Ford EBS Ford EEJ Ford EES Ford EEK Ford EEK Ford EEK Ford EEK Ford EEK Ford EEK Ford ECK Ford ECK Ford ECK Ford ECK Ford ECK Ford EDN Ford EDN Ford EDN Ford EDN Ford EDN Ford EDN Ford ECK For	6-3-5 x 3-7	223 292 292 292 292 292 292 292 292 292	78777777777777777777777777777777777777	4900 3550 3550 3550 4900 2699 2770 2699 2770 2699 2770 2699 2077 2	186 4000 187 3800 187 3800 187 3800 187 3800 187 3800 187 3800 187 3800 187 3800 187 3800 212 3800 226 3800 226 3800 227 3400 227 3400 277 3400 277 3400 277 3400 187 3800 188 4000 187 3800 187 3800 187 3800 187 3800 188 4000 187 3800 188 4000 187 3800 187 3800 187 3800 188 4000 187 3800 188 4000 187 3800 187 3800 188 4000 187 3800 188 4000 187 3800 187 3800 188 4000 189 4200 189	Ford Ford Ford Ford Ford Ford Ford Ford	4444445555555555555444445544444453333333	Tim F108* Eat 1614* Spi 60* Spi 60* Tim B140 Tim B140 Tim B140 Tim B140 Tim B140 Tim B140 Tim D100 Tim C100 Tim C100 Tim C100 Tim C100 Tim C100 Eat 22M Eat 28M Eat 28M Eat 28M Eat 28M Eat 34M Eat 34M Eat 34M Eat 34M Eat 34M Eat 34M Eat 38M	***************************************	TITITITITITITITITITITITITITITITITITITI	6.2 - 5.83 - 6.2 - 7.2 - 7.17 - 6.50 - 6.67 - 7.03 - 7.17 - 6.50 - 6.67 - 7.03 - 7.17 - 6.50 - 6.67 - 7.03 - 6.50 - 6.67 - 7.03 - 7.79 - 6.50 - 6.2 - 7.2 - 7.2 - 7.3 -
(enworth (D)	190 178 2103	255 255 255 234	46000 42000	12700 12765 11800 10500 13800 13865 16200 16400 13830 12500 12565 22500 22800	10.00 20 10.00 20 10.00 20 10.00 20 10.00 20 10.00 20 10.00 20 10.00 20 10.00 20 11.00 22 10.00 20 11.00 20 11.00 20 11.00 20 11.00 20 11.00 20 11.00 24 12.00 24	11.00/22 11.00/22 11.00/22 11.00/22 11.00/22 11.00/22 11.00/22 11.00/24 11.00/24 11.00/22 11.00/24 11.00/24 11.00/24 11.00/24 14.00/24	Cum JTB Cum JTB Cum JTB Cum JTB Cum NH220 H.S. 590GV3 Cum NH220	6 41 x5 6 41 x5 6 51 x8 6 51 x6 6 51 x6	401 401 743 590 743 743 743 743 590 590 743 743	16.0 6.6 6.6 16.0	350 350 535 490 535 535 535 535 490 490 535	180 - 2400 220 - 2100 232 - 2800 220 - 2100 220 - 2100 220 - 2100 220 - 2100 232 - 2800 232 - 2800 220 - 2100	5A65 <sup>A</sup> 5A65 <sup>A</sup> 3241 <sup>A</sup> Fu 5C72 <sup>A</sup> 8241 <sup>A</sup>	15 15 15 15	Tim R200+ Tim R200 Tim R200 Tim R200+ Tim SQHD Tim SW456 Tim SFD4640 Tim SQHD Tim R200 Tim SQHD Tim SQHD	H2F H2F H2F H2F WF WF B2F H2F WF B2F B2F B2F	HILL HILL	5.91-9.7 5.91-9.7 5.91-9.7 5.67-8.2 4.72-8.2 8.07-11. 5.91-9.7 5.67-8.2 8.07-11. 8.07-11.
(Sc. Bus Ch.) 4C	178 1 205   1 233 1		24000 24000 24000	7965	9.00/20D 9.00/20D 9.00/20D	10.00/20 10.00/20 10.00/20	Ford ECT* Ford ECT*	8 3 2 x 3 2 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2	332	7.6	328	212-3800 212-3800 212-3800	3 4	5 5		HF HF	H	6.8 -7.2 6.8 -7.2 6.8 -7.2
Montpelier	104	104	5000 6000	*4300	6.70 15S 6.70 15S 7.00 16S 7.00 16S	7.00 15S 7.00 15S 7.50 16S 7.50 16S	Con F4162* Con F4162* Con F4162*	4-3 16 x48 6 4-3 16 x48 6 4-3 16 x48 6 4-3 16 x48 6	162	6.1	118 118 118 118	58-300 58-300	WG T87D WG T87D WG T87D WG T87D	3	Spi 45 Spi 45 Spi 60 Spi 60	HIS HF HF	HHHH	** -4.
Peterbilt (D) 280 (c.o.e.) 281 (D) 281	175 114	Opt Opt Opt	27000		10.00/20D 10.00/20 10.00/20	11.00/22 11.00/22 11.00/22	Cum NHB600 Cum NHB600 Cum NHB600	6-51-x6 6-51-x6 6-51-x6	743	17.0	500 500 500	200-210	0 Spi 8041 0 Spi 8041 0 Spi 8045	12 12 12		2F 2F 2F	R	5.91-6. 5.91-6. 5.91-6.
Reo C-200 C-201	125		18500 19500		8/22.5	10/22.5	Own OA1102 Own OA1102	6-35/x41/g 6-35/x41/g	255	6.7	194	110-340	WG T98A		Tim F140+	HF		6.2 -7

For references and abbreviations see page 122

Continued on page 130

### Thompson Products wrote the book on values and complete value service





(positive type)



Sold thru the world's finest jobbers

and developed just about every major valve improvement made during the past 50 odd years. Thompson literally wrote the book on valves and valve service.

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### 1959 TRUCK SPECIFICATIONS

Continued from page 128

	WHE				TIRE	SIZES		ENGINE D	ETAI	LS			TRANSMISSI	ON	RE	AR A)	LE	
MAKE			icle Weight Service		S-sin	al rear glo rear								.00			ene	
MODEL.	Minimum Standard	Maximum Standard	Gross Vehicle for Normal Sor	Chassis Weight (See definition)	Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
B—Cent'd C-202 C-203 C-300 C-301 C-301 C-302 C-302 C-303 C-402 C-402 C-402 C-402 C-403 C-402 C-403 C-500 C-501 A-603 A-603 D-A-603 D-A-603 D-A-603 D-A-703 D-A	158% 158% 122 108 108 187 219 238 256 238 256 238 256 168 170	185 185 185 185 185 185 185 185 185 185	22000 23500 310000	**C295** **C395** **C	8, 22.5 8, 22.5 10, 22.5 10, 22.5 10, 22.5 10, 22.5 10, 22.5 10, 22.5 10, 22.5 10, 22.5 11, 22.5	10/22.5 10/22.5 11/22.5 11/22.5 11/22.5 11/22.5 11/22.5 11/22.5 11/24.5 11/24.5 11/24.5 11/24.5 11/24.5 11/24.5 11/24.5 12/22.5	Own OA1102 Own OA1102 Own OA1102 Own OA1304 Own OA1304 Own OA1304 Own OA1304 Own OA1304 Own OA1465 Own OA1465 Own OA1465 Own OA1465 Own OA1465 Own OH170* Own OH170* Own OH170* Own OH170* Own OH170* Own OW170* Own OW207* Own OV207*	0-39 m41 s 0-41 m41 s	390 390 390 401 390 401 390 390 390 401 672 672 672 672 390 401	686777776753337603367777777777777777777777	354 354 354 412 504 504 412 194 194 194 194 230 230 270 270 270 270	110 3400 130 3300 130 3300 130 3300 130 3300 130 3300 130 3300 145 3200 145 3200 145 3200 145 3200 145 3200 170 3400 170 3400 170 3400 207	Cia 205V Cia 205V Cia 205V Cia 205V Cia 205V Cia 205V Cia 205V Cia 205V Cia 205V Spi 3152 Spi 3152 Spi 3152 Spi 3152 Spi 3152 Spi 3152 Spi 3152 Spi 3152 Spi 3152 Fu 5A65 Fu 5	455555555555555555555555555555555555555	Tim H140+ Tim H140+ Tim L140 Tim L140 Tim H140+ Tim L140+ Tim L140+ Tim L140+		TITITITITITITITITITITITITITITITITITITI	6. 2 - 7. 2. 6. 13 - 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8.
udebaker 4E1 4E2 4E3 4E6 4E7 4E8 4E8 4E7 4E11 4E12 4E18 4E14 4E18 4E48 4E48 4E48 4E48	112 112 112 122 122 131 131 131	2 122 2 122 2 122 2 122 2 122 2 122 2 122 2 122 1 131 1 131 1 171 1 171	5000 5000 5000 5200 7000 7000 10000 15000 15000	2380 2290 2290 2290 2380 2535 2625 3140 3050 3635 3730 4445	6.00/16S 6.00/16S 6.00/16S 6.00/16S 6.00/16S 7.10/16S 7.00/16S 7.00/16S 7.00/17S 7.00/17S 7.00/17S 68/19.5D 68.25/20D	6.50/16S 6.50/16S 6.50/16S 6.50/16S 6.50/16S 6.50/16S 7.50/17S 7.50/17S 7.50/16 9.00/20 9.00/20 10.00/20	Own 1E Own 3E Own 4E Own 4E Own 6E Own 6E Own 6E Own 6E Own 6E Own 4E Own 6E Own 6E Own 6E Own 6E Own 6E	6-3x4 8-3 t x3 t 4 6-3 t x4 3 6 6-3 t x4 3 6 6-3 t x3 5 6 8-3 t x3 5 6	289 246 289 289	7.5 7.5 8.0 7.5 7.5 7.5 7.5 7.5 7.5 7.5	225 196 133 196 260 196 260 260 196 196 280 260	141-380 94-320 75-360 94-320 154-380 154-380 154-380 94-320 94-320 154-380 154-380	WG T908 WG T908 WG T908 WG T908 WG T908 WG T908 OWG T908 OWG T980 OWG T980 OWG T980 OWG T980 OWG T980 OWG T980 OWG T980 OWG T980 OWG T980	333333444444444444444444444444444444444	Spi 2211 Spi 2211 Spi 2211 Spi 2211 Spi 2211 Spi 60 Spi 60 Tim B100 Tim B100 Tim E102 Tim E102	HIS SECOND		4.27-4 4.09-4 4.27-4 4.09-4 3.73-4 4.10-4 4.86-5 6.20-6 6.20-6 6.20-6
ard-La France 400R-1 500R-1 600R-1 (D) 400R-D-1 (D) 500R-D-1 (D) 700R-D-1	145	5 193 5 193 5 193 5 193	34000 40000 3 29000 3 34000	10400 11460 10000 11570	2 10.00/20 0 11.00/22 0 11.00/22 0 10.00/20 0 11.00/22 5 11.00/22		Con T5427 Con U6501 Con R6602 Cum JBS Cum HRFB Cum NH220	6-4-4476 6-4-2514 6-4762536 6-41625 6-51626 6-51626	501 602 401 743	6.4 6.1 6.2 13.0 15.5	412 484 375 580	178-260 232-280 160-250 190-200	0 Ful 5A43 0 Ful 5A62 0 Ful 5C72 0 Ful 5A65 0 Ful 5C72 0 Ful 5W74	0000000	Tim R-140 Tim U-200	H 2H H H 2H	RRRRR	00 -6 00 -7 00 -6 00 -7
our-Wheel Drive	15		34000	12000	0 11.00/20 0 11.00/20 0 11.00/20	12.00/20 12.00/20 12.00/20	Buda LO-525 Wau 140GZ Cum HB6001	6-41-5x51-5 6-45-5x51-5 6-47-5x6	554	6.7	451	188-260	0 Fu 5A650 0 Fu 4A86 0 Fu 5A650**	5485	OW-289-CM OW-289-CM OW-289-CM	2 2 2		7.17- 7.17- 7.17-
orige	100 100 110 110 110 110 110 110 110 110	8 116 6 116 6 116 6 126 9 125 9 125 6 176	8 800 8 800 8 800 8 950 9 1000 9 1000 4 2000	0	7/17.5S 7/17.5S 7/17.5S 7/17.5 7/50/16 7/50/16 7/17.5 8/22.5 8/22.5	7/17.5\$ 7/17.5\$ 8/19.5\$ 7/17.5 9.00/16 8/19.5\$ 8/17.5 9/22.5 9/22.5	Own Own Own Own Own Own Own Own	6-31/4 x45/4 8-3.91 x3.31 6-31/4 x45/4 8-3.91 x3.31 6-31/4 x45/6 6-3.43 x4.51 8-3.91 x3.31 8-3.91 x3.31	230 318 230 318 230 251 311 5 268	7.9 8.2 7.9 8.2	202 290 202 290 196 216 292 292	205-440 2120-360 2205-440 3113-360 3125-360 2207-440 3130-360	0 WG T85E 0 WG T85E 0 WG T85E 0 WG T85E 0 NP 420 0 NP 420 0 NP 420 0 NP 420	333344444	Spi 60 Own W200 Own W200 Own W300M Spi 70 Spi 70 Tim H141	Hy Hy Hy HF HF HF HF	HH	4.1 - 4.1 - 4.89- 4.88- 4.88-
uplex L-6802- (D) LC-600-					0 11.00/20 0 11.00/20	12.00/20 12.00/20	Con R8802 Cum HRB800	6-43%x5% 6-51%x6	60: 74:	2 6.1	465		0 Fu 5C650 0 Fu 5C650		Tim 1758 Tim 1758	2F 2F	H	
abce (c) FD201/ (c) FD201/ (c) FD201/ (c) FD251/ (c) FD201/	13 13 13 13 13	0 17	2 1900 2 1900 2 2700	0 570 0 570 0 750	0 7.50/20 0 7.50/20 0 7.50/20 0 7.50/20 0 8.25/20 0 8/22.5	9.00/20 8.25/20 8.25/20 9.00/20 10/22.5	Chevrolet Ford Ford Chevrolet	6-3%x3+4 8-3.5x3.1 8-3.6x3.1 8-3.8x3.5 8-37%x3	25 31	9 7.1 6 7.1 7 7.1	5 21	5 132-420 8 140-390 6 170-390		1	Chevrolet Cond Cond Cond Cond Cond Cond Cond Cond	Hyf HF HF SF Hyf	HHHH	7.17

For references and abbreviations see page 122

Continued on page 132



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### 1959 TRUCK SPECIFICATIONS

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	WHI		-1				SIZES		ENGINE D	ETA	ILS			TRANSMISSIO	IN	RE	AR A)	CLE	
MAKE		T	-	/eight		D-dua S-sing	l rear de rear											9	
AND MODEL	Minimum Standard	Maximum	Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Medel	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
our-Wheel Drive-	-Con	r'd	1																
(c) FD201C (c) FD251D (c) FD302B	154		72	19000 20000 26000	6500	8/22.5 8/22.5 10/22.5	10/22.5 10/22.5 11/22.5	GMC Int Ford	8-3 4x3 6 6-3 4x4  8-3.8x3.6	269	7.8 6.5 7.6	227	206 -4400 103 -2800 212 -3800	Int*	10	GMC Tim F105 Eat 1790	Hyf HF SF	HHH	** -6. ** -6. ** -7.
ederal 200R44 (D) Q200R44 (D) D300R44 (D) D300R44 (D) D400R44 (D) D500R44 (D) D500R44 (D) D700R44 (D) D700R44	145 145 145 145 145 145 145 146 146	5 19 5 19 5 19 5 19 5 19 5 19 5 19 5 19	93 93	29000 34000 34000 40000	*7485 *7370 *7945 *10802 *10872 *11280 *12440 *12332	8,25/20 8,25/20 9,00/20 9,00/20 10,00/20 10,00/20 11,00/22 11,00/22 11,00/22		Her JXD Con TD6427 Her JXLD Cum JN6B Con T6427 Cum JBS600 Con U6501 Cum HRFB600 Con R6602 Cum NHB600	6 4x41/4 6 4x47/8 6 4x41/5 6 41/4x5 6 41/4x5 6 41/4x5 6 41/4x51/4 6 51/4x6 6 47/4x51/8 6 51/4x6	320 427 339 401 427 401 501 743 602 743		254 307 264 290 356 350 413 550 484 535	116-2400 138-3000 125-2500 179-3000 150-2500 178-2600 180-2000 232-2800	Cla 205V Cla 290V Cla 295V Cla 290V Cla 290V Cla 290V Cla 290V Fu 5A65 Fu 5A65 Fu 5A65 .8051A	5 5 5 5	Tim H140 Tim H140 Tim L140 Tim L140 Tim QT140 Tim QT140 Tim R140 Tim R140 Tim R140 Tim U200 Tim U200	H H H H H H H2		** -6. ** -6. ** -6. ** -7. ** -7. ** -7.
ordF-100 (4x4	3.13	8 1	18 18 18 18	5600 5600 7400 7400	3495 3600	6.70/15S 6.70/15S 6.50/16S 6.50/16S	7/17.5\$ 7/17.5\$ 8/19.5\$ 8/19.5\$	Ford EBR Ford EBR Ford EBR	6 35 x3 1 8 33 x3 8 6 35 x3 1 8 33 x3 8	223 292 223 292	7.9	269 207	139-4200	Ford*	3333	Ford 3300 Ford 3300 Spi 60 Spi 60	H34 H34 HF HF	HHHH	** -3 ** -3 ** -4
WD 177 199 199 (D) 2284 (D) 2330 (D) 2884 (D) 2885 (D) 3276 (D) 3886 (D) 3886 (D) 406 (D) 406 (D) 4086 (D) 4086	140 140 140 140 140 140 140 140 140 140			17000 20000 20000 28000 23000 23000 28000 28000 32000 32000 36000 40000 40000 40000 32000	7620 7680 8890 11990 8850 9000 8860 9750 11405 12150 11800 13100 13100 14800	7.50/20D 8.25/20D 8.25/20D 10.00/20D 10.00/20D 11.00/20D 9.00/20D 10.00/20D 10.00/20D 10.00/20D 10.00/20D 11.00/20D	10.00 / 20S 10.00 / 20S 10.00 / 20S 11.00 / 20S 11.00 / 20S 11.00 / 20 10.00 / 20S 10.00 / 20S 11.00 / 20S 11.00 / 20S 11.00 / 20S 13.00 / 20S 13.00 / 20S 13.00 / 20S 14.00 / 20S	Int BD240 Int BD264 Int BD264 Int BD268 Int BD306 Int RD450 Cum JT6B Int BD306 GMC 3-71 Int RD372 GMC 4-71 Int RD496 Cum JT6B Int RD450 GMC 4-71 Cum HR68 Int RD501 Cum HR68 Wau 145GK Wau 145GK GMC 6-71 Cum NH20 Int RD501	6-3 1 144 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	264 308 451 401 308 213 372 284 408 401 451 284 743 501 777 777 421 742	6.5 16.3 6.5 17.0 6.5 17.0 6.5 16.3 16.5 16.5 16.5 16.5 16.5 16.5 16.5 16.5	248 286 388 407 286 277 308 375 388 407 388 407 550 550 550 550 650 670 607	153-380 154-360 175-250 175-250 154-360 102-210 165-320 175-250 175-250 175-250 175-180 212-200 190-200 216-200 240-240	J Int T31 Jint T62 Jint T62 Jint T63 Jint T62 Jint T63 Jint T31 Jint T61 Jint T31 Jint T61 Jint T31 Jint T61 Jint T61 Jint T61 Jint T61 Jint T62 Jint T62 Jint T62 Jint T62 Jint T62 Jint T62 Jint T72 Jint T62 Jint T62 Jint T62 Jint T72 Ji	5555555555555555555	Own 23 Own 23 Own 23 Own 23 Own 23 Own 23 Own 33A Own 33A Own 33A Own 33 Own 33 Own 33 Own 33 Own 33 Own 33	SF SF SF SF SF SF SF SF SF SF SF SF SF S		4.86-8 4.86-8 4.86-8 4.86-8 4.86-8 4.86-8 4.86-8 4.86-8 4.86-1 4.85-1 4.85-1 5.71-8 5.71-8 5.71-8
Marmon-Herrington 10 10 50 50 50 50 60 60 60 70 71 75 60 67 C77 C78 C88	4 114 134 134 134 134 134 134 134 134 13	00 1 00 1 00 1 00 1 00 1 00 1 00 1 00 1	118 118 154 154 154 192 192 192 192 192 153 153 153 153	2600	0 ^342: 0 ^496- 0 ^508: 0 ^508: 0 ^546- 0 ^675: 0 ^675: 0 ^700: 0 ^781: 0 ^815: 0 ^698: 0 ^780: 0 ^780:	0 6.50/16S 5 6.50/16S 4 7/22.5D 9 7/22.5D 9 8/22.5D 8 8/22.5D 4 8/22.5D 3 9/22.5D 3 9/22.5D 3 9/22.5D 7 10/22.5D 9 10/22.5D 9 10/22.5D 9 1/22.5D 9 1/22.5D 9 1/22.5D	6.50/16S 6.50/16S 8/22.5 8/22.5 8/22.5 10/22.5 10/22.5 10/22.5 10/22.5 10/22.5 10/22.5 10/22.5 11/22.5 10/22.5 11/22.5 11/22.5 11/22.5 11/22.5 11/22.5	Ford Ford Ford Ford Ford Ford Ford Ford	6-3-4x3-1 6-3-4x3-1 6-3-4x3-1 8-3-4x3-1 6-3-4x3-1 8-3-4x	29 22 29 29 29 29 29 30 33 40 29 30 33	2 7.1 2 7.3 3 8.2 2 7.2 2 7.2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	9 268 3 207 9 268 8 270 3 207 9 268 8 270 9 268 8 270 8 270 8 270 6 321 5 350 9 268 270 6 321 6 321 6 321	186-400 138-420 186-400 187-380 139-420 188-400 187-380 186-400 187-380 196-380 122-380 186-400 187-380 186-400 187-380	0 War 198A° 0 War 198A° 0 War 198A' 0 War 198A 0 Cla 280V 0 Cla 284V 0 Spi 4852 0 War 198A 0 War 198A	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Tim D100 Tim D100 Tim D100 Tim F106 Tim F106 Tim F106 Eat 1614 Eat 1614 Eat 1790A Eat 1790A Eat 1614 Eat 1614 Eat 1614	H	*****	80 - 80 - 80 - 80 - 80 - 80 - 80 - 80 -
Oshkosh W-21 W-31 (D) W-316- W-41 (D) W-515- W-518-D W-616- W-816-D W-	66 11:44 11:50 11:	52 552 552 552 552 550 550 550 550 550 5		3200 3200 3200 3600 3600 3600 3600 3600	00 995 00 931 00 952 01 1006 01 1280 01 1410 01 1440 01 1640 01 1640 01 1650 01 1650 01 1230 01 1230	5 10, 22, 5 0 10, 00, 20 0 10, 22, 5 0 10, 22, 5 0 10, 22, 5 0 10, 02, 25 0 10, 02, 25 0 10, 02, 25 0 10, 00, 20 0 12, 22, 5 0 11, 00, 20 0 12, 22, 5 0 13, 20, 24 0 13, 20, 24 0 12, 20, 20 0 13, 20, 24 0 12, 20, 20 0 13, 20, 20 0 10,		Con 86427 Int RD406 Cum JN58 Int RD409 Cum JT68 Cum JT68 Int RD450 Int RD501	6 43 km 4 6 4 km 5 6 5 km 6 5 km 6 6 5	400 400 400 400 400 400 400 400 400 400	77 66 11 11 11 11 11 11 11 11 12 12 12 12 13 13 13 13 13 13 13 13 13 13 13 13 13	40 388 444 424 444 466 488 488 515 515 588 600 866 600 866 549 422 426 600	8 137-266 8 175-3225 5 130-256 8 175-3227 7 175-256 8 175-327 7 175-256 8 175-327 8 182-364 4 212-304 4 212-304 4 212-304 4 212-304 4 210-266 4 218-266 9 190-200 0 19	0 Own MT216 0 Own MT316		i Own R314 i Own R316 i Own R514 i Own R515 i Own R515 i Own R515 i Own R516 i Own R616 i Own R62 i Own R64 i Ow	SF SF 2F SF 2F 2F 2F 2F 2F 2F 2F 2F 2F 2F 2F 2F 2F		

For references and abbreviations see page 122

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### The world's most popular

### Power Brake is Hydrovac

### because ...

Vacuum power provides instant, effortless power braking plus maximum dependability and safety—even if power should ever fail, brakes can be applied manually.

Vacuum power saves dead weight. This can add several hundred extra pounds to every pay-load. And extra pounds mean extra profits.

Vacuum power does the job simpler and better with less maintenance and lower original cost!

Vacuum power steals no horsepower as it is completely free of compressor drain on engine power.

Unchallenged facts like these have made Hydrovac® Vacuum Power Braking first choice among truck operators—in fact, with over  $5\frac{1}{2}$  million sold, more Hydrovac units are in use than all other types.

### HYDROVAC (VACUUM HYDRAULIC) POWER BRAKING BY BENDIX

Bendix PRODUCTS South Bend, IND.

Sendification Corporation

Company of the Composition o

### 1959 TRUCK SPECIFICATIONS

Continued from page 132

MAKE AND MODEL	WHEEL- BASE			D-dual rear S-single rear			ENGINE D	ETA	ILS			TRANSMISSI	ON	REAR AXLE			
	BAGE	Weight											T				
	Minimum Standard Maximum Standard	58	Chassis Weight (See definition)	Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
Four-Wheel Drive— Pathkosh — Cont'd  45-85  (D) 45-85-17  18-34  (D) W-2100-M  (D) W-2208-M  (D) W-2208-M  (D) W-2801  (D) W-2800  (D) W-2801  (D) W-2801		42000 42000 52000 56000 42000 62000 90000 120000 120000	11900 12800 14700 15600 16000 21000 21500 31500	11.00 /24† 11.00 /24† 10 /22.5† 11 /22.5† 13.00 /20 14.00 /24 14.00 /24 16.00 /25 18.00 /25 18.00 /25		Con T6427 Cum JT68 Int RD501 Int RD501 Int RD501 Cum HRF68 HS 6182B1 Cum NHRS68 HS 6182R1 Cum NHRS68 HS 6182R1 Cum NHRS68 HS 6182R1	6-4-4 x43 6-41-x51-4 6-51-x51-4 6-51-x6-51-x6-51-x6-51-x6-51-x6-51-x6-51-x6-51-x6-51-x6-51-x6-51-x6-51-x6-51-x6-51-x6-51-x6-51-x6-51-x	427 401 501 743 1091 743 743 1091 743		407 444 444 580 1070 865 865 1070 865	212-3000 212-3000 190-2000 356-2200 320-2100 356-2200 320-2100	Own MT55 Own MT55 Own MT18 Own MT18 Own MT2100 Own MT2100 Own MT2202 All TG602 All TG602 All TG602 All TG602	10 10 10 12 10 10 3 3	Own R55 Own R55 Tim SLDD Tim SQDD Own R2100 Own R2100 Own R2209M Own R2500 Own R2500 Own R2800 Own R2800	2F 2F 2F 2F 2F 2F 2F 2F PF		
dudebaker 4E2D 4E3D 4E6D 4E7D 4E11D 4E12D 4E13D 4E14D	112 122 112 122 112 122 122 122 122 122 131 131	5400 5400 5400 7400 7400 9400	2800 2800 2875 2985 3070 3635	6.00 16S 6.00 16S 7.10 16S 7.00 16S 7.00 16S 7.00 17S 7.00 17S 7.00 17S	6.50 16S 6.50 16S 6.50 16S 6.50 16S 7.50 17S 7.50 17S 7.50 16 7.50 16	Own 3E Own 4E Own 4E Own 3E Own 3E Own 3E Own 4E	8-316x314 6-316x434 8-316x434 6-316x434 8-316x314 8-316x314 8-316x314 8-316x314	246 259 259	7.5 7.5 7.5 7.5 7.5	196 196 225 196 225 225	94-3200 94-3200 141-3800 94-3200 141-3800 141-3800	WG T98A WG T98A WG T98A WG T98A WG T98A WG T98A WG T98A	4 4 4 4 4 4	Spi 2211 Spi 2211 Spi 2211 Spi 2211 Spi 60 Spi 60 Tim B100 Tim B100	HIS HIS HIS HF HF HF HF		** 4.8 ** 4.8 ** 4.8 ** 4.8 ** 5.1
Valter (c.f.) FZM (c.f.) AEB (c.f.) AGB (c.f.) AGR	126 150 126 150 138 162 138 162	36000 36000	13000 14000	12.00/20S 12.00/24S 12.00/24S 12.00/24D		Wau MZA Wau 140GZ Wau 145GKB Wau 145GKB	6-414x434 6-454x512 6-514x6 6-514x6	404 554 779 779	6.2	440 585	165-2250 240-2400	Own FJN Own FC Own FA Own FA	6 6 6	Own MS Own FCC Own FCC Own FCR	2 2 2 2	HHHH	** -8.1 ** -9.1 ** -9.1
Vard-La Fr. 400R-53 500R-53 600R-53 400R-44 500R-44 600R-0-53 (D) 700R-0-43 (D) 700R-D-53 (D) 900R-0-44 (D) 900R-0-44	145 193 145 193 145 193 145 193 145 193 145 193 145 193	49000 60000 29000 34000 40000 42000 49000 60000 34000	13450 15152 11132 11610 12662 11697 14450 17390 11202	10.00 20 11.00/22 11.00 22 10.00 20 11.00 22 11.00 22 11.00 22 11.00 22 11.00 22 11.00 22 11.00 22 11.00 22		Con T6427 Con U6501 Con R6602 Con T6427 Con U6501 Con R6602 Cum JBS Cum HRFB Cum NH220 Cum JBS Cum HRFB	6 4 1 x 47 x 51 x 6 4 1 x 51 x 5 1 x 5 6 4 1 x 5 1 x 5 6 4 1 x 5 1 x 5 6 5 1	501 602 427 501 602 401 743 743 401 743	6.2 6.4 6.1 6.2 13.0 15.5 15.5	412 484 350 412 484 375 580 606 375 580	178 - 2600 232 - 2800 170 - 3000 178 - 2600 232 - 2800 160 - 2500 190 - 2000 220 - 2100 160 - 2500 190 - 2000	Ful 5A43 ) Ful 5A62 ) Ful 5C72 ) Ful 5A63 ) Ful 5A62 ) Ful 5C72 ) Ful 5C72 ) Ful 5W74 ) Ful 5A65 ) Ful 5C72 ) Ful 5C72 ) Ful 5C72 ) Ful 5C72	5 5 5 5 5 5 5 5 5 5 5 5 5 5	Tim SLHD Tim SQDD Tim SFDD Tim SFDD Tim QT140 Tim R140 Tim SLHD Tim SQDD Tim SQDD Tim SFD4600 Tim GT140 Tim R140 Tim U200	H H 2H H 2H H H 2H H H 2H	LILERRILLERR	** -7. ** -6. ** -6. ** -7. ** -6. ** -7. ** -6.
/illys F4-134-4x4 F4-134-4x2 F4-134-4wD L8-226-4x4 L8-226-4wD GJ-38 CJ-5 CJ-8 DJ-3A FC-150	104 104 118 118 104 104 104 104 118 118 80, 80, 80 81 81	4500 4500 4500 4500 3500 3750 3900 2600 5000	1836 2151 2102 1953 2262 1725 1756 1805 1352 2208	7.00 15S 6.70 15S 7.00 16S 7.00 16S 6.70 15S 6.70 16S 6.00 16S 6.00 16S 6.40 15S 6.40 15S 7.00 15S 7.00 16S	7.00/15S 6.70/15S 7.00/16S 7.00/16S 6.70/15S 7.00/16S 6.00/16S 6.00/16S 6.00/16S 6.40/15S 7.00/15S 7.00/16S	Own Own Own Own Own Own Own Own Own Own	4-33-5x42-6 4-33-5x42-6 4-33-5x42-6 6-3-6x42-6 4-33-5x42-6 4-33-5x42-6 4-33-5x42-6 4-33-5x42-6 6-3-6x42-6 6-3-6x42-6 6-3-6x42-6	134 134 226 226 226 134 134 134	6.9 6.9 6.9 6.9 6.9 6.9	114 114 190 190 190 190 114 114 115	75-400 72-400 105-360 105-360 105-360 72-400 72-400 60-400 72-400	0 WG T90C 0 WG T90C 0 WG T90J 0 WG T90J 0 WG T90J 0 WG T90C 0 WG T90C 0 WG T90C 0 WG T90C 0 WG T90A	3 3 3 3 3	Spi 44 Spi 44 Spi 53-2 Spi 34 Spi 44 Spi 44 Spi 53 Spi 44-2 Spi 44-2 Spi 23 Spi 44-1 Spi 23 Spi 44-1 Spi 53	H142 H142 H142 H142 H142 H142 H142 H142	IIIIIIIIIIII	4.27-4. -5. -4.4. 4.27-4. -5. -5. -5. -4.
ix-Wheelers  Jiamond T	133 211 111 189 145 211 145 211 145 211 114 190 133 213 114 190 133 213	29500 9 29500 9 30000 1 31500 0 31500 0 31500 0 31500 0 31500 0 31500	9800 9450 9300 11700 11800 11600 10500	9.00/20 9.00/20 10.00/20 9.00/20D 10.00/20D 10.00/20D 10.00/20 10.00/20 10.00/20 10.00/20 9/22.5	11.00/20 11.00/20 11.00/20 11.00/22 11.00/22 11.00/20 11.00/20 11.00/24 11.00/24 11.00/24	Cum JT6B Cum JT6B HS 590 Cum HRF6 Cum HRF6 Cum HRF20 Cum HRF20 Cum NH180 Cum NH180 Cum NTO6 Cum NTO6	6-41-4x5 6-41-4x5 6-5x5 6-5x6 6-5x6 6-5x6 6-5x6 6-5x6 6-5x6 6-5x6 6-5x6 6-5x6	401 401 590 743 743 743 672 672 743 354		405 405 501 579 604 579 604 504 698 698	175-250 175-250 239-280 190-200 220-210 190-200 220-210 180-210 262- 262-	D Fu SA650 D Fu SA650 D Spi 6452 D Fu 1081120 D Fu 5C720 D Fu 5C720 D Fu 5C720 D Spi 6453A Fu 1081120 Fu 1081120 D Cla 265V	5 5 5 10 10 5 5 5	Eat 18803 Eat 18803 Tim R140P Tim R140P Eat 1911 Eat 1911 Eat 18803 Tim R140P	S S Hy Hy Hy		Opt Opt Opt Opt 6.8 -7.
Podge T700 T800 HD T900	144 193	45000		8/22.5 9/22.5 11/22.5	10/22.5 11/22.5 12/22.5	Own Own Own	8-3+1x35-6 8-3+1x35-6 8-3+1x35-6	354	7.5	340		0 Cla 265V 0 Cla 265V 0 Cla 300		Tim SDHD Tim SLHD Tim SQHD	Hy Hy Hy		6.8 -7 7.8 -8 7.8 -8
uplex TH6 (D) L6	160 200	8 40000	11500	8.25/20 10.00/20 11.00/20	9.00/20 11.00/20 12.00/20	Her JXD Con B6427 Cum HB600	6-4x41-6 6-4-6x43-6 6-43-6x6	320 427 672	6.6	325	141-260	0 Fu 5B33‡ 0 Fu 5A43 0 Fu 5A920	5	Tim SBD1055 Tim SD3010 Tim SD454	BF 2F SF2	RL	8.27- 6.8 -8
abco (c) FD201A (c) FD201B (c) FD201B (c) FD201B (c) FD201D WT	130 Op 130 Op 130 Op 154 19 150 15	t 30000 t 30000 t 40000 0 27000 0 30000	10500 10500 13000 8700 10600	8.25/20 8.25/20 8.25/20 8.25/20 8.25/20 8/22.5 9.00/20 9.00/20	9.00/20 9.00/20 9.00/20 9.00/20 10/22.5 9.00/20 9.00/20	Chevrolet Ford Ford Int Ford GMC	6-334x311 8-3.5x3.1 8-3.6x3.1 8-3.8x3.5 6-314x414 8-3.8x3.6 6-4x4	239 256 317 282 332	7.5	5 215 5 226 2 286 5 251 6 328	132-400 140-300 170-390 137-360 212-380	0 Ford*	10 10 10 30	Ford Ford	HyF HF SF SF HF		7.17-7
Federal         200 R86           (D)         D200 R86           (D)         300 R86           (D)         D300 R86           400 R86         400 R86           (D)         D400 R86           (D)         D500 R86           (D)         D500 R86           (D)         D700 R86	157 19 157 19 157 19 157 19 157 19 157 19 157 19 157 19 157 19	3 28000 3 34000 3 34000 3 42000 3 42000 3 49000 3 49000	*8570 *8554 0 *9129 0 *12377 0 *12677 0 *14400 0 *15400	0 8.25/20 0 8.25/20 4 9.00/20 9 9.00/20 7 10.00/20 7 10.00/20 1 11.00/22 2 11.00/22 0 11.00/22		TD 6427 Her JXLD Cum JN6B Con T6427 Cum JBS600 Con U6501 Cum HRFB600 Con R6602	6-4x412 6-4x472 6-4x472 6-4x53 6-4x53 6-4x53 6-5x6 6-4x53 6-5x6	339 401 427 401 501 743	7	254 307 264 290 356 350 413 550 484 538	7 116-240 1 138-320 1 125-250 1 179-300 1 150-250 1 178-260 1 180-200 1 232-280	0 5A65	555555555555	Tim SFHD Tim SFHD Tim SLHD Tim SLHD Tim SQDD SQDD SGDD	H H H H H H H2 H2		** -7 ** -6 ** -6 ** -7 ** -7 ** -7 ** -7 ** -8

For references and abbreviations see page 122

Continued on page 136



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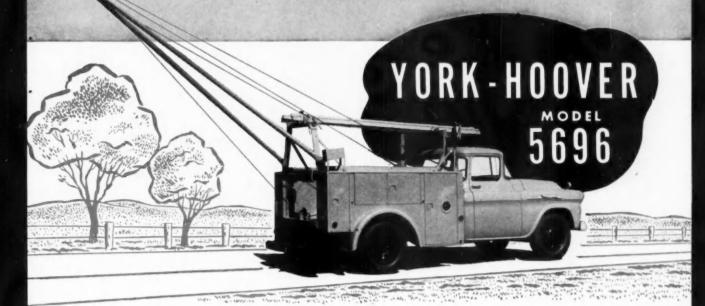
### 1959 TRUCK SPECIFICATIONS

Continued from page 134

MAKE AND MODEL	WHE				D-dual rear S-single rear		ENGINE DETAILS						TRANSMISSI	ON	REAR AXLE			
			Veight															
	Minimum Standard	Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	Standard Front and Roar	Maximum Authorized Tire Size (Duals unless	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	<b>Drive and Torque</b>	Gear Ratio Range in High
ix-Wheelers—Cont	ď																	
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For references and abbreviations see page 122

### Triple Service Functions of the 5696 Save You Time and Money



### FOR LIGHT LINE WORK, MAINTENANCE AND GENERAL SERVICE

### **5696 FEATURES**

Mechanically operated derrick readily sets 35' pole

24' extension ladder available for overhead line maintenance

Galvannealed steel side compartments and understructure

Same tread plate floor used in larger line bodies

Compartments contain pullout drawers, bins and thru box Illustrating 24 ft. extension ladder pivoting on rear sheave bar with retaining sockets on rear bumper. Ladder can by used away from vehicle. Stored derrick is raised to work position in seconds by use of winch line and winch. Key locks on all compartment doors.



### 5696 BENEFITS

Moderately priced, extremely flexible in its work functions

Long service under rugged, every day operating conditions

Tool and materials needed for service work are readily accessible

Normal functions of light line job provided by winch and folding derrick

Backed by 66 years of Creative Engineering Service to the Public Utility Industry

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PODY DIVISION
YORK-HOOVER CORPORATION

YORK, PENNSYLVANIA

Dept. 3C, York-Hoover Corporation

Please send me a copy of Bulletin No. 946 covering your 5696 Combination Unit.

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Company.\_\_\_\_

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City and State\_\_\_\_\_

### **NEW TRAILERS....**



### **Brown Adds Two All-Steel Models**

TWO ALL-STEEL trailer models have been added to the full line of aluminum units built by Brown

Trailer Div., Clark Equipment Co. The new models will also be available as composites — part aluminum and part steel — to meet operators special requirements.

One of the two steel units, Model SV, is a straight floor version (shown here). The other model has a step-floor design. These two mark Brown's entry into the steel trailer field. Both are offered in lengths from 19 to 40 ft and with four choices of height.

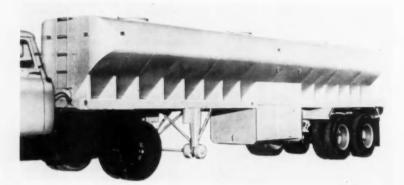
Many parts are

interchangeable with Brown's aluminum trailers. Fleet operators can choose some aluminum components to reduce weight.

Riveted side panel construction is the same on both steel and aluminum models.

Both single and tandem axle suspensions are offered in Brown's new version of a short beam spring-type running gear. Both are reported to eliminate axle hopping.

### Three Makers Develop Bulk Commodity Units



### **A BAUGHMAN**

AUGHMAN MFG. CO., Jerseyville, Ill., has designed a bulk transport trailer featuring a combination air-mechanical discharge system. It's designed for hauling freeflowing materials such as fertilizer, feed and cement.

Using the air-mechanical system, the trailer can throw cement 100 ft high at % ton per minute. Using the straight mechanical discharge, it unloads at about a ton a minute. The system also has a split auger for unloading the rear half and front half in sequence.

The tank is made of 13-gage steel or optionally in aluminum. Each is built to fleet operators specifications of height, weight, length and capacity.

### W GRAMM

GRAMM TRAILER CORP., Lima, Ohio, has introduced a new trailer which is both a bottom hopper and an exterior-post freight trailer. The floor has two hinged sections which are raised and lowered by a removeable hoist. They open to the front and rear to form the forward and rear walls of the hopper which is sealed by a rubber gasket.



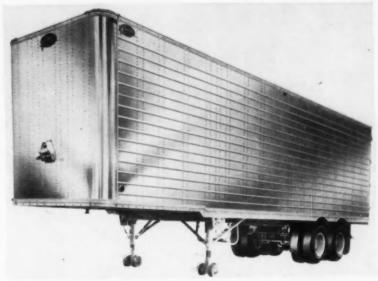
COMMERCIAL CAR JOURNAL, July, 1959

### Dorsey Describes Full New Line

DORSEY'S 1959 line includes 14 new model trailers and truck bodies. Of special interest are eight models on which an automatic riveting machine is used

The automatically-riveted lines include:

- Straight-floor high cube vans—the Vanguard (exterior-Post) Model HEPT and the Satellite (exteriorskin) Model HALT shown here. Capacity is 2260 cu ft in 35-ft models. Weight is 9990 lb.
- Two grain trailers—an exteriorskin and an exterior-post model weighing 8350 lb. This series also includes a new bulk fruit model.
- Two fully stress-riveted steel trailers—an outside-post Titan and an outside-skin Atlas each weighing 10,130 lb in standard 35-ft lengths.
- A lightweight livestock van with



die-punched flanged holes in the hi-tensile steel side panels.

### A new version of the

Champion line, named the Champion II, has 10-in. radius front corners, a flat roof and extra inside width. This series has X-braced side structures in addition to the stressed skin.

It also has the full-width upper fifth wheel introduced by Dorsey last year in its Satellite and Vanguard lines.

The remaining new models include a bulk cement trailer, hopper-type aggregate and dry bulk trailers and bodies, and three new self-unloading feed and bulk materials bodies and trailers (May, page 96).

Hopper is loaded through two hatches in the roof and has approximately 1000 cu ft capacity.

For freight use, the floor sections are lowered to their original position to make a full length freight trailer with two full-width rear doors and a 42-in. curb side door located just ahead of the front hopper.

Special units are available to meet fleet operators particular requirements.



COMMERCIAL CAR JOURNAL, July, 1959



### **A TRAILMOBILE**

RAILMOBILE has introduced a new dry commodity bulk trailer. Basically, it's a lightweight pressure tank on wheels. Discharge system works at low pressure (15 lb psi) and requires only a single stage compressor to operate it. Discharge rate for cement is 1300 lb per minute.

Discharge is controlled by a single lever which regulates commodity flow and controls air pressure. Trailer can discharge directly to the top of storage silos or batch plants without need for elevator systems. A 4-in. flexible hose does the job.

Compressor can be mounted on the tractor, the trailer or at the point of discharge.

### How

### STRADDLE TRAILER

### **Cuts Costs**

Loads on pallets can be picked up in a minute without the driver leaving the cab. Result: trailer triples its daily work capacity

WHEN ONE TRAILER REPLACES THREE, and does the job with less effort, you have a happy user. Gerard Renzelman is happy. He's storage superintendent for Gates Rubber Co. in Denver, Colo. And he uses a Straddle Trailer to move up to 5000 tires a day from the factory to the Gates warehouse 11 miles away.

What's a Straddle Trailer? It's the brain child of Chester C. Clifton, president of Mighty Mover Corp., another Denver firm. You see it in action in the accompanying photos.

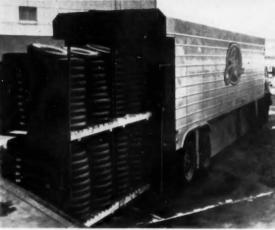
Palletized loads are stacked, ready to be picked up. When the driver arrives, he backs up so the trailer covers the load. Without getting out of the cab he operates the simple hydraulic controls that bring two angle iron shoes in under the pallets and lift and center the load automatically. In a minute he's on his way with the load. Power for the hydraulic lift can be built into the trailer or provided from any standard highway tractor.

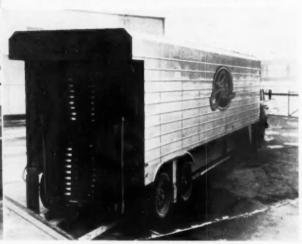
Keynote of the Clifton design is bridge-type frame construction and walking-beam wheel suspension. Most significant design innovation was the mechanism that powers the lifting shoes.

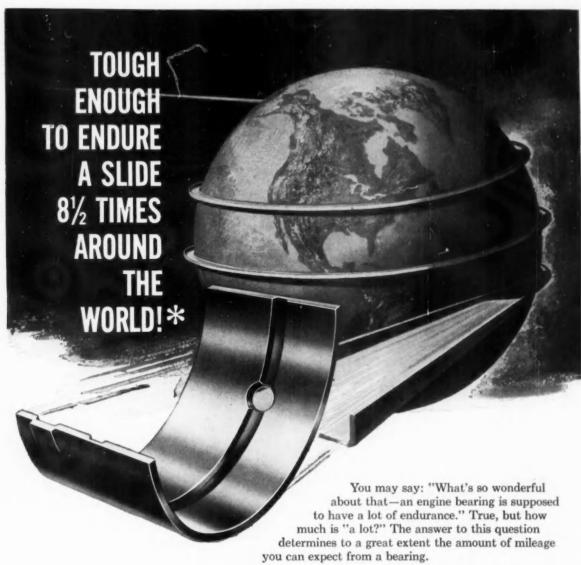
(TURN TO PAGE 148, PLEASE)

Driver lines up the rig with the load, backs up to cover it. Load is automatically centered and locked in position by hydraulically operated gripping shoes









Creating bearings that have a longer life span has always been a specialty of Clevite engineers. Many case reports show that Clevite 77 bearings have stayed on the job for as long as 300,000 traveled miles. No other fact we could present could better verify the high performance ability of Clevite 77 bearings.

Always use replacement engine bearings that you can install with confidence. Specify Monmouth Clevite 77. Get them from your N.A.P.A. jobber.

\*By slide, we mean the action of a given point on the crankshaft traveling over the bearing surface. 300,000 vehicle miles result in a slide of 210,000 miles (8½ times around the world) when using a ratio of .7 to one.

### Monmouth

ENGINE BEARINGS

CLEVITE SERVICE: Cleveland Graphite Bronze . Division of Clevile Corporation . Cleveland 3, Ohio



### Hytrol Brake System Gives Balanced Braking

HYDRO-AIRE DIV., Crane Co., Burbank, Cal., has introduced an anti-skid brake system for air brake equipped combination vehicles. The "Hytrol" system, as it is called, operates on the same principle as aircraft brakes and makes it virtually impossible to skid.

The system uses standard air brake equipment. To it is added two other components—a skid sensing device mounted at the hub of the wheel, and the "Hytrol" valve.

### The sensing device works on

the inertia wheel principle and is the "brain" for brake action. When brakes are applied, it senses if the wheel is about to lock. In a fraction of a second, it translates this condition to the "Hytrol" valve mounted on each

brake chamber which takes immediate action to prevent

As a result, regardless of road conditions or whether the rig is loaded or empty, there is no wheel hopping, locking or skidding. It's reported a driver can fully apply the brakes without fear of jackknifing or losing control.

### Here's how the system

works: The skid detector in each wheel hub is connected electrically to the "Hytrol" valve controlling that wheel. The "brain" signals the valve whenever the wheel is going to lock. The valve, in turn, instantly adjusts the pressure in the brake chamber so that maximum braking is achieved without locking the wheel. This goes on simultaneously on all trailer wheels and tractor drive wheels.

Hydro-Aire Div., which makes the Hytrol system, says that in tests, stopping distances were reduced 10 per cent using a fully loaded tractor-trailer on dry concrete highway. On the same highway with the trailer empty, stopping distance was cut 33 per cent.

It's reported that the Hytrol system is so precise that even on gravel surfaces wheel hop is eliminated.

### Thompson Demonstrates New Hill Retarder

By Ed Shea, Technical Editor

RECENTLY I attended a demonstration of the newest Thompson Hill Retarder on a long hill near Harrisburg, Pa. The retarder absorbs power through a special hydraulic fluid. The system includes the basic retarder, a heat exchanger, a loading cylinder and an air control valve.

The demonstration included two trips, one in a tandemaxle bobtail tractor, the other in a loaded tractor-trailer.

Did the retarder do a job? When I rode the bobtail tractor, the driver applied the retarder half-way down the hill in sixth gear against full engine power. In an instant, we were down to a slow crawl without a single brake application and without locking the rear wheels.

### Next came the ride I was

waiting for—in the fully-loaded rig. This one would really tell the story. We started down the hill (grossing 60,000 lb) with full power. Then, with throttle still open, the driver applied the retarder. It slowed us down to a crawl smoothly.

I asked the driver (who, incidentally, had been operating a retarder for only two days) if he could position the air control valve so we could continue down the hill at a constant speed, say about 1500 rpm. He moved the lever and we held an even 1500 rpm for the next quarter of a mile.

### Here's an interesting point.

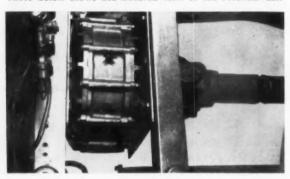
After both units made eight complete round trips, I felt the brake drums to see just how hard the brakes had been used. The drums were cool. In all cases, brakes were used only to bring the vehicle from a crawl to a stop.

Two basic types of installation are available, a midmount or an axle-mount. The mid-mount model is generally used on single drive axle vehicles and works on the drive shaft (see photo). The axle-mounted model is bolted to the top of the rear tandem on tandem axle rigs.

Looking at the retarder are Ed Gogolin, general manager, Pa. Motor Truck Assn., Bob Fidler and Ed Herbenar, Thomp-



son Products Div., and Bob Dodson, Chemical Tank Lines. Photo below shows mid-mounted view of the retarder unit





### You're invited to see how grease affects your profit picture

Texaco has produced a film called "Shear Magic". It explains why and how grease has kept pace with technical advances in your fleet equipment.

### Like everything else, grease is no longer simple.

How could it be? On the road today, grease has a tougher job to do than ever before. Speeds are faster, loads heavier, distances greater. All the more reason why you'll find this film interesting.

### "Shear Magic" is not a sales film.

It is devoted entirely to helpful information about greases. You will see how only the right greases protect against heat, water, cold, dust, shock and other problems you encounter on the road. You will learn how the right grease schedule—one planned exactly for your operation—can help you control costs.

If you'd like to switch off the lights and view this film, mail the coupon today.

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Please send me more information about a free showing of "Shear Magic" to my organization.

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LUBRICATION IS A MAJOR FACTOR IN COST CONTROL

COMMERCIAL CAR JOURNAL, July, 1959

### New Unloader Cuts Handling Costs of Building Materials

BUILDERS EQUIPMENT CO.. Phoenix, Ariz., makes an unloader which drastically cuts handling costs of brick, concrete block and pipe and similar masonry materials. Named the Superlite Unloader, it fits any standard 8-ft wide flatbed truck or trailer. Rated capacity of the lift is 7000 lb.

The unloader permits fleet operators to palletize materials for faster loading, delivery and unloading. It's mounted on tracks installed on 92-in. centers and travels





the full length of the truck or trailer bed. Fold-out extensions on the rear permit exact positioning of the load (see photos.)

### The Superlite Unloader is

hydraulically operated. Power comes from a Briggs and Stratton one-cyl engine connected to a Vickers hydraulic pump. The unit is controlled from either side and can be transferred easily from one truck or trailer to another.

Besides unloading, the device can also be bridged for truck-to-trailer operations. In addition, many fleets use it for loading.

Builders Equipment Co., which makes the unloader, says the unit cuts delivery costs 50 per cent and eliminates material damage entirely.

### New Cargo Tie-Down System Has Second Decking Feature

A NEW HEAVY-DUTY cargo control system offers time and money-saving possibilities to fleet operators. Made by the General Logistics Div., Aeroquip Corp., Burbank, Cal., the tie-down system prevents cargo shifting and at the same time permits second decking to increase payload capacity.

The new system is particularly valuable to household goods and electronic equipment movers.

The Series "E" General Logistics system consists of 11-gage steel track installed horizontally in rows along the side of the trailer. Special fittings with web straps fit into the track. Cargo is strapped in place and secured by a Weblock buckle—similar to an aircraft safety belt.

### Second decking is accomplished by

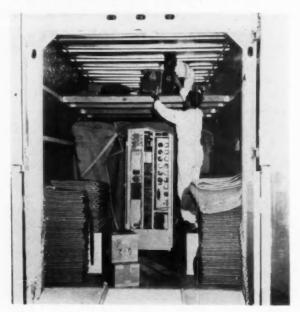
wood 2 x 4's. They're equipped with steel end-fittings which fasten into the track. Plywood decking is then placed over these supports to give an inexpensive second level.

The system practically eliminates unused space (see photo). Since the tie-down track and fittings do not project into the van body, no trailer cube is lost.

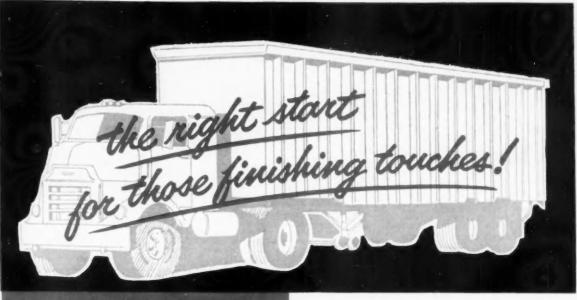
The cargo control system is easily installed in most trailers. It is presently being used by Global Van & Storage Co., an agent of Global Van Lines. The system is installed in a Dorsey Model No. FC186 DeLuxe furniture van and is used for hauling heavy, highly sensitive electronic equipment.

This new system is for heavy-duty service. The second deck, for example, can support up to 1000 lb on each cross member.

A light-duty version of the cargo control system was introduced early last year (page 102, Jan. '58).



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## COMMERCIAL BODY HARDWARE





Good body jobs deserve the best in hard-ware . . . the best quality and design in hinges, locks, handles, regulators and all the rest. To make sure every job meets the customer's fondest expectations, start with Hansen Commercial Body Hardware . . . The Hardware For Hard Wear!

FREE . . , send for new Hansen Catalog 221



WINDOW REGULATOR



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### July News Roundup

### Chrysler Piggy-Backs New Cars

st. LOUIS, Mo. — Frisco Railroad hauled a 10-flatcar, 20-trailer piggyback shipment of 80 new Chrysler cars from here to Texas last month. It was a trial run aimed at workingout the bugs before volume shipping begins this fall.

### **ATA Promotes Two**

WASHINGTON, D. C.—American Trucking Assns. has promoted Peter T. Beardsley to the position of general counsel for the Association and James F. Fort to the position of general counsel-public affairs. Beardsley moves up after seven years as director of ATA's Law Dept. Fort has been assistant to ATA's general counsel since 1954.

### Parking Brake Reg Announced

WASHINGTON, D. C.—Middle of last month, the Interstate Commerce Commission released the text of the revised "Adequacy of Brake" and "Parking Brakes" sections of its Safety Regs. Complete text of the two sections is given below . . . with new material shown in bold face. They become effective December 31, 1959.

193.40—Adequacy of Brakes. Every bus, truck, truck-tractor, and combination of motor vehicles, except as provided in Sec. 193.42, shall be equipped with brakes adequate to control the movement of, and to stop and to hold, such vehicle or combination of vehicles. Two separate means of brake application shall be provided. One such means shall be a parking brake which will conform to the requirements of Sec. 193.41. If these two separate means of

applying the brakes are connected in any way, they shall be so constructed that failure of any one part of the operating mechanism shall not leave the vehicle without operative brakes.

193.41-Parking Brakes. Every singly driven motor vehicle and every combination of motor vehicles shall be equipped with parking brakes adequate to hold the vehicle or combination on any grade on which it is operated, under any condition of loading, on a surface free from snow or ice. The parking brakes shall be capable of being applied in conformance with the foregoing requirements by the driver's muscular effort or by spring action. Their operation may be assisted by the service brakes or other source of power provided that failure of the service brakes or other power assisting mechanism will not prevent the parking brakes from being applied in conformance with the foregoing requirements. The parking brakes shall be so designed that when once applied they shall remain in the applied position despite exhaustion of any source of energy or leakage of any kind.

### Jenkins Wins Dow Award

CHICAGO—Joseph T. Jenkins, safety director of Mason and Dixon Lines, Kingsport, Tenn., has been named winner of the 1958 Marcus A. Dow Memorial Award. He has been its safety director since 1947. In that time, Mason and Dixon has reduced the frequency rate of its intercity operations from 3.7 accidents every 100,000 miles in 1947 to 0.22 in 1958. During the period, the city pickup and delivery rate was reduced from 7.60 to 2.50.

### Grace Line Turns to Containers

NEW YORK CITY—Grace Line, serving South American ports from the east coast, is converting two ships to container service—the Santa Eliana and the Santa Leonor. They'll be back in service late this year and early in 1960. Grace has ordered 1500 containers, with an option on 500 more, from Highway Trailer Co., Edgerton, Wis. Each ship will carry 476 of the boxes. They measure 17 ft long, 8 ft wide, 8 ft high. Designed for dry cargo, (TURN TO PAGE 192, PLEASE)

World Trade Week in Philadelphia got a healthy boost from the trucking industry. One day (May 23, 1959) was designated for Highway Transportation. It began with a three-block long Motorcade with almost every kind of truck or combination participating. Parade ended-up at the local waterfront. Here a full afternoon's program included more truck equipment plus a mock Truck Roadeo. Commercial Car Journal's Mobile Office was the first commercial vehicle in the parade preceded only by a flatbed carrying the Philadelphia Police and Fireman's Band. Parade was organized by the Pennsylvania Motor Truck Assn., included vehicles from more than 15 fleets.

Undersecretary of Commerce for Transportation John J. Allen watches intently as driver Westley H. Dodson checks hose connections. The Undersecretary rode with Dodson, who drives for Davidson Transfer & Storage Co., from Baltimore, Md. to Jersey City, N. J.—some 186 miles. The Nation's head man for transportation came away much impressed. "Riding in the cab of a tractortrailer is a great way to see America," Allen said. Dodson's comment about having such an important VIP as a passenger: "It was the most enjoyable trip I've had in a long time . . . and I picked up some good stories. That Allen really can tell 'em."





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COMMERCIAL CAR JOURNAL, July, 1959

# HOW gravel producer gets 147,160 miles from truck before overhaul

Teamwork and good lubrication are the key, Guaranteed Gravel & Sand Company finds In April, 1954, a Harvester R-190 12-ton dump truck was put into service hauling gravel. In November of 1956, after 147,160 miles, the unit was overhauled and reconditioned. Bearings and crankshaft were in excellent condition and total engine cleanliness was good. Just before overhaul, gasoline mileage was 5.3 miles per gallon, oil consumption was exceptionally low. Stanolube HD-M was the motor oil during all of this 2½ year service period.

STANOLUBE HD-M Motor Oil quality starts with base stock which is especially selected. To this carefully refined base stock, additives developed by Standard Oil research are blended in. These additives retard oil oxidation, minimize formation of piston and ring deposits, prevent formation of excessive varnish and sludge and prevent corrosive attack on bearing metals.

The use of Stanolube HD-M Motor Oil by this Mankato, Minnesota, aggregate producer, began in 1953. At the start Standard Oil lubrication specialist Earl Kommerstad analyzed the lubrication requirements of all of the company's equipment and helped the management set up a maintenance program. Proper service intervals and drain periods were the first step. The result is an operation that can get 147,000 miles out of equipment.

Is this the sort of help you'd like? Get it by calling the lubrication specialist in the Standard Oil office near you in any of the 15 Midwest or Rocky Mountain states. Or write Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

Michigan Avenue, Chicago 80, Illinois. You expect more from (STANDARD and you get it! Old #33, the truck that went 147,160 miles before its first overhaul. Driver Elmer Gaetke and Standard's Earl Kommerstad take a look at the engine. Earl knows how to help customers get top performance from automotive equipment. He's had five years' experience in such work with Standard. In addition, Earl has studied engineering at Augsburg College and the Univ. of Minn. Quick facts about STANOLUBE HD-M Motor Oil Refined from highest-quality, solvent-extracted base stock. Contains special additives that prevent bearing and bronze wrist-pin bushing corrosion, reduce piston ring varnish and keep rings free to seal against blow-by. Contains still other additives that reduce wear on heavily stressed parts.

# **Straddle Trailer Cuts Costs**

Continued from Page 140

Two hydraulic

cylinders are mounted across the top of the trailer frame. They power steel cables that bring the two sets of arms in to grip the load with a total force of about 16,000 lb. Power from a third cylinder lifts the shoes and the load. Arms can be adjusted in seconds for pallets ranging from 36 to 75 in. wide.

To pick up the load, the driver needs only activate the cylinders —positioning and centering is automatic. The loading is locked at the cylinders on the trailer by check valves, so the load can't be lost by power or hose failure from the tractor.

For some loads.

a simple open frame will do, with the full visibility making the driver's job of positioning and backing that much easier. In the closed models, the lifting shoes form a tight seal around the pallet, and steel panels on the arms box in the whole load against weather and dirt.

The low center of gravity—the bottom of the pallet is just 12 inches off the ground—makes the trailer easy handling on the road.

Wilhelm Trucking Co. of Portland, Ore., had a custom hauling tariff for steel of 13.8 per cwt with a 40,000-lb minimum, customer loading and unloading. With the Straddle Trailer the tariff is seven cents cwt, with a 20,000-lb minimum. The customer loads and unloads the pallets. And Wilhelm is grossing \$25 to \$35 per hour on the operation.

END

Please Resume Reading Page 142

## Truckers Set Up Own Patrol in Georgia

THE GEORGIA TRUCKING industry has recently organized a statewide Cooperative Safety Patrol. This is the latest state to put such a patrol into operation.

With a minimum of 100 cars, the patrol is making surprise road checks at least one night each week. Covering every major truck route in the state, the cars are unmarked except for a decal on the rear reading "Trucking Industry Safety Patrol."

The cars operate

out of 11 cities. They are manned by executives and employees of Georgia truck operators and suppliers who write "observation reports" on every truck spotted. A copy of each report goes to the home office of the company operating the truck.

The reports cover any violation of safe-driving practices such as speeding, tailgating, unsafe passing and inadequate lights and reflectors.

Personnel of the patrol work through the Council of Safety Supervisors of the Georgia Motor Truck Assn.



# with HANDY GOVERNORS

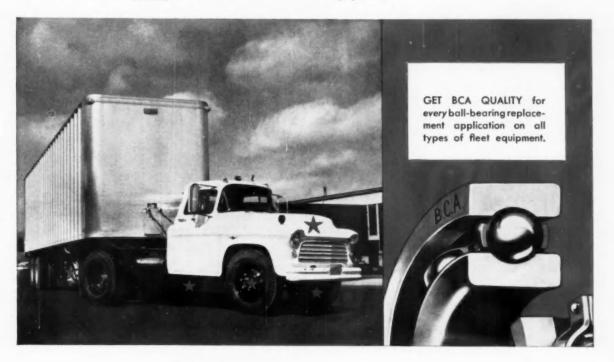
So equipped, your vehicles:

- Require less fuel per ton-mile
- Get better tire milegge
- Need less overall maintenance
- Have fewer accidents

Savings, very worthwhile . . .
Cost of governors, insignificant.



Better products, faster, from your BCA bearing jobber:



# It pays to <u>standardize</u> on BCA quality for truck, tractor and trailer ball bearings!



Cash in on BCA's years of automotive bearing experience . . . save with one-source purchasing from local stocks!

Today's fleet maintenance is a never-ending struggle! Supervisors must fight the clock so rigs roll on schedule . . . battle rising costs to stay competitive. And one sure way to do both is to standardize your fleet on BCA replacement ball bearings.

Heavy-duty BCA ball bearings handle every job—in wheels, generators, clutches, transmissions, differentials, starters and power steering. Over 50 years of BCA know-how pays off on the road in reduced downtime . . . in the shop as smooth-fitting, easy-to-install parts. And buying from a single local source trims overhead, too. You save on ordering and invoicing, stock only most-used parts . . . get same-day delivery on BCA ball bearings whenever you need them. Get all the facts on how to save time and money by standardizing on BCA replacement ball bearings. Call your BCA jobber now!

# **BCA BALL BEARINGS**

FEDERAL-MOGUL SERVICE
DIVISION OF FEDERAL-MOGUL-BOWER BEARINGS, INC. • DETROIT 13, MICHIGAN



Custom Design Opportunity No. 3

PG4



# One of six custom design opportunities offered by new SERIES



When your operating conditions suggest a low cost trailer with big revenue potential—we urge you to check the Trailmobile P-64.

The P-64 is an all-steel trailer that is unusually lightlighter, in fact, than some aluminum units. But, while this trailer offers the exceptional strength of steel, it compromises nothing in terms of payload capacity.

The P-64 is a straight floor van mounted on a new under-structure having a 4" upper fifth wheel. This means you get a 96" inside loading height and a 93" inside width—big payload capacity in a rugged van that promises low, low upkeep.

And the P-64 brings you all the new CID Series '60 features. An improved and drastically lighter tandem . . . an easier to operate prop . . . a lighter, but super-strong integral post side panel . . . and a connector case that facilitates trailer interchange.

If you're looking for truly practical values at low cost, look into the Trailmobile P-64. We think you'll like what you see.

And remember, the P-64 is just one of six basic custom design opportunities with CID Series '60.

TR-762

\* Customer Individualized Design



## RAILMOBILE INC.

. Springfield, Mo. . Longview, Texas . Berkeley 10, Calif.

### **NEW WIRING SYSTEM**

The only wiring system that can be serviced with the trailer fully loaded now includes a new connector case that provides both 7-way and 6-way plugs, plus new quick-connecting terminals to simplify interchange when electrical connections do not match.

#### **NEW TANDEM**

Here is the matchless Trailmobile tandem in an updated model that is lighter by hundreds of pounds. Newly designed rocker beams, a new, more stable 9-leave spring, and direct mounting of tandem to sub frame substantially reduce weight without sacrifice of strength.

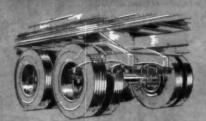
### **NEW BUMPERS**

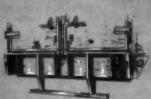
New, cast steel corner bumpers give solid protection and transmit all impacts to the frame. Additional protection is provided by a new, full-width tail shelf, reinforced with vertical bumper plates, and ICC bumpers backed up by the sub-frame.

## NEW LANDING GEAR

This new unitized design brings you strength, light weight and perfect alignment in an easier to-operate prop. A full 17" travel assures proper coupling under any ground condition. In addition, a positive locking feature prevents gears from disengaging while cranking.









# MOHAWI AASHO Road Test Continued from Page 102 TRUCK TIRES



# "bonus-built" to keep trucks on the go...for less...

Drive a truck over all kinds of roads in all kinds of weather and you quickly learn the best tires cost the least.

That's why profit-conscious owners buy Mohawks. They are "bonusbuilt" to stand up under the toughest driving conditions. For example, the Mohawk Extra Mileage Lug shown on the milk truck above. This lug type, over-the-road tire is designed to deliver maximum traction without sacrificing mileage.

Note the extra wide 431/2% deeper tread, the heavy lugs and deep zigzag center design. Here's a.tread that gets loads through on time throughout its long life!

Its extra strong, all nylon carcass is designed to take recap after recap -the result of Mohawk's years of experience as a leading manufacturer of retread rubber and repair

For "bonus mileage" that will slash your costs per mile, equip your fleet with Mohawks. See your local Mohawk dealer. He is an expert on truck tires and their repair.

#### The MOHAWK RUBBER Co. Akron 5, Ohio

AKRON, OHIO . HELENA, ARKANSAS STOCKTON, CALIFORNIA

There's a Mohawk Truck Tire for every hauling need...Each unconditionally guaranteed in writing!



Big chunk of that report will be devoted to how much "damage" the various axle weights do to various types of road construction.

#### At AASHO, the chief

device being used to measure this "damage" or road wear is known as a "longitudinal profilometer." Essentially, it consists of an Aframe hooked onto a truck or station wagon at the front end and supported by two pairs of motorcycle wheels at the rear. Two sets of dolly wheels are attached to the rear axle.

They ride in the wheel naths of the trucks roaring around each loop. Through electronic circuitry. they trace a continuous longitudinal profile of the bumps and depressions on an oscillograph chart.

#### This chart is

fed into a gadget knows as an "electronic digitizer." The digitizer coughs up a five-channel paper tape showing the amount of rise and fall in the pavement at one-foot intervals.

Afterward, the tape along with other findings goes into a Bendix G-15 computer. The end result, after more electronic gymnastics, is a "serviceability index." This is a scale running from zero to five which provides a means of measuring pavement deterioration. A rating of five means a perfect road surface, while two or below stands for a road that is either kaput or nearly so.

#### Serviceability index

numbers are computed for each of the project's hundreds of test sections every two weeks. By plotting the serviceability index numbers against the number of times given axle loads pass over a test section. the researchers get a picture that can be translated into the "performance" of a pavement of particular design under a certain load.

The serviceability index is based primarily on the profilometer readings, but it includes several other (TURN TO PAGE 155, PLEASE)



Aluminum Titt-Cab by Diamond T, Chicago, Illinois . Aluminum Trailer by Timpte Brothers, Inc., Denver, Colorado,

# Sparkling Performance by Diamond T

New Diamond T Diesel Tractors made with Reynolds Aluminum haul higher legal loads over highways from coast to coast

The new 50-inch Tilt-Cab by Diamond T is engineered to provide more space and weight for freight. Designed in aluminum to make it shorter and lighter, this cab can pull full legal-limit trailer lengths—and haul a bigger payload too.

Strong, lightweight, rustfree Reynolds Aluminum was the metal chosen not only for the cab, but for crossmembers, fuel tanks, battery boxes and other components. Dimension for dimension, aluminum weighs only one-third as much as steel—and pound for pound it's much stronger. Versatile and excep-

tionally easy to fabricate, aluminum is the ideal metal to complement engineering skill.

Reynolds is proud to have supplied the aluminum to Diamond T for this proved highway performer that combines light weight with heavy-duty specifications—simplicity with functional design—and ease of maintenance with unmatched accessibility. Whether you buy or build highway equipment, you get more from Reynolds Aluminum. Call your nearest Reynolds office or write Reynolds Metals Company, P.O. Box 2346-VJ, Richmond 18, Virginia.

Watch Reynolds TV show-"WALT DISNEY PRESENTS"-every week on ABC-TV

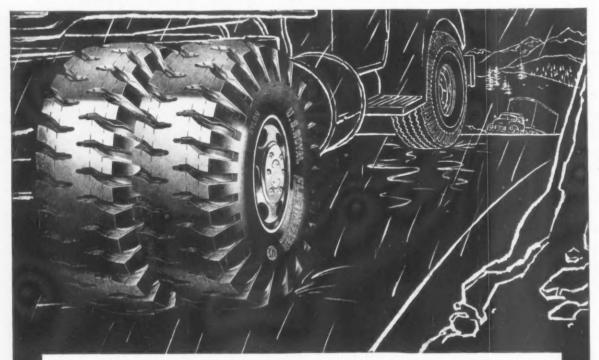
REYNOLDS ALUMINUM

The Finest Products
Made with Aluminum

are made with

REYNOLDS ALUMINUM

# NEW MILEAGE RECORD-BREAKER!



# Fleets report the new Cross-Lug U. S. Royal Fleetmaster Dual-Purpose-Nylon outwears all in rugged highway service!

Right across the country, users say this great tire is establishing all kinds of new records for highway mileage. U. S. Royal built it to do just that. 60% deeper tread, of new "Maximum Mileage" compound, substantially increases wear, reduces per-mile tire costs. Big deep cross-lugs deliver 35%

more pull-power. Double-Strength Nylon cord defies impact blowouts. Test a set of these new U. S. Royal Dual-Purpose-Nylon Tires, in tubed or advanced tubeless construction: Call your U. S. Royal Dealer now. And make sure to specify "U. S. Royal" on the next new equipment you buy!

# U.S. ROYAL TRUCK TIRES



ted States Rubber

Pockefeller Center, New York 20, N. Y. . In Canada: Dominion Rubber Company, Ltd.

#### **AASHO Road Test**

Continued from Page 152

factors. Among them are readings obtained by a transverse profilometer—basically similar to the longitudinal unit except that it measures the profile of the highway at right angles to the direction of traffic movement.

Of course, the researchers realize that such things as "service-ability" and "performance" have to be based on human judgment, and they have devised an ingenious method of utilizing the judgment of qualified people to validate the index numbers.

They have selected

a panel of qualified "judges" who have ridden over and observed highway payements in use in several sections of the midwest. The members of this jury have rated certain sections of these highways in the same terms as the five-point serviceability index mentioned above. Then, officials at the Ottawa test site sent their instruments out over these highways. The various measurements are then set down as terms in a formula, and by means of a complicated analysis, are made to equal the rating made by the jury.

The result of this "calibrating" is that when one of the test pavements at Ottawa gets a service-ability index once every two weeks, the index is, in effect, the same as the rating which would have been made by the panel of judges. Periodically, during the test, the judges will be called in to make ratings that can be checked against the index numbers derived from the measurements.

(TURN TO PAGE 158, PLEASE)

Stena May: "My boy friend is a fair-minded fellow."

Steno Fay: "How do you mean fair-minded?"

Steno May: "For example, he buys me lipstick, because he's the one who always takes it off."

Steno Fay: "You should see the lingeric my boy friend buys me!"



# Here's why it's important that plugs be correctly matched to

Champion engineers show the importance of correct spark plug design—by demonstrating what can happen when spark plugs do <u>not</u> meet an engine's requirements—

If you have any of these problems, often caused by mismatched spark plugs or unusual operating conditions, ask a Champion representative to call. He'll help you select the Champion spark plug types that are *correctly matched* to the requirements of every engine



2. The electrodes in these spark plugs got too hot and burned after only 1200 miles in use! Why? Because the plugs were not the correct type for the engine in which they were installed. "Mismatched" spark plugs often burn electrodes quickly, cause loss of power, hard starting, and require too-frequent replacement.



**3.** Excessive fouling or short electrode-life can also be caused by prolonged low- or high-speed driving. Champion solves these problems by designing several plug types with different heat ranges for every engine. If you have a problem, ask a Champion representative to help you select the Champion plugs best suited to your engines.

# your spark your engines

in your fleet. (Champion designs spark plug types for every make of truck and car!) Use this free Champion service to improve your fleet's ignition performance. Call your Champion representative or supplier, or write Champion at Toledo 1, Ohio.



4. There's a Champion spark plug type correctly matched to the specific requirements of every engine. That's why you can tune your engines to deliver peak performance with Champion spark plugs. Get full power, top gas economy and longer spark plug life—install Champion spark plugs in every engine in your fleet.



1. Excessive fouling occurs when spark plug tips do not get hot enough to burn away carbon and oil deposits. "Mismatched" spark plugs that fire all right at average engine speeds, often become fouled when combustion chamber temperatures drop during prolonged low speed or idle operation. Fouled plugs misfire, waste gas and power, and require frequent servicing.



#### **AASHO Road Test**

Continued from Page 155

The panel

was carefully selected to include highway engineers, and representatives of the vehicle manufacturers, highway user organizations, and materials suppliers. Its ratings of certain highways have been checked against those of truck drivers and just-plain-motorists to make sure the panel was not biased. All of which shows the lengths to which test officials are going to guarantee the accuracy and objectivity of their findings.

Some 7000 measuring devices of various kinds have been bolted, imbedded, cemented and otherwise connected to the test pavements. The bulk of them are used to make periodic measurements of the bumps and bends that are created in a piece of pavement only while it is under a loaded vehicle. Re-

searchers at Ottawa hope that from this data they'll be able to come up with a formula which will enable highway departments to calculate the service life of a pavement from measurement of such transient changes.

Although the primary purpose of the AASHO test is to equate pavement performance and axle loads, it includes a number of side studies—some closely related to fleet operations.

The question of

skid resistance is being explored intensively, for example, Researchers are trying to learn whether traffic polishes the surface of rigid and flexible pavements and makes these roadways more slippery the longer they remain in service. The relationship between tire pressure and transient pavement distortions is also being explored, as is the ability of paved shoulders to protect the subsurface of the roadway against moisture infiltrationwhich leads to "pumping" out of the subbase and subsequent slab failure.

Checks are also being made on short span bridges. There are 16 of these 50-ft spans on the two loops carrying the heaviest axle loads. All are under-designed according to accepted standards. To date several on the weak side have been damaged to the extent they have been removed from further testing.

The U. S. Army

Transportation Corps, which supplies the men who operate the test vehicles, is studying driver fatigue. Ottawa is ideal for such a project because those who pilot the rigs around the loops have what is probably one of the most monotonous driving tasks ever given to anyone.

Incidentally, the drivers turn in the usual "Drivers' Daily Report"—with one exception. There are the usual spaces to report mileage, check equipment and gripe about mechanical condition. In addition, there's a blank space headed, "Pavement needing repair." Might be an idea to add it to your gripe sheets.

END

Please Resume Reading Page 103



# STRICKLAND equips 78 new trucks... 50 new trailers...with WAGNER AIR BRAKES!



Strickland Transportation Company of Dallas, with a fleet operation extending from New York City to San Antonio, knows that low maintenance for trucks and trailers means higher operating profit. Here's what L. R. Strickland, President, has to say about Wagner Air Brake Systems:

"Running an over-the-road truck fleet operation successfully depends greatly on getting the most out of the equipment you have. I specify parts and equipment on the basis of what will help lengthen the service life of these vehicles. I'm glad to tell you that when it comes to air brakes, I'll take Wagner every time. Our maintenance costs are more than satisfactory. One of the main things I like about the Wagner system is the Rotary Air Compressor. For my money it is the most efficient pump on the market."

"All-in-all, our experience and records show that Wagner Air Brakes are our best buy. I've just ordered 78 new trucks and 50 new trailers equipped with Wagner Air Brakes—what better recommendation can I give?"

Wagner Rotary Air Compressors, the only compressors that use the true rotary motion, are available in either 9 or 12 C.F.M. capacity, and in a drive-thru model for diesel-powered trucks.





Remember, when ordering new equipment, be sure to specify Wagner Air Brakes.

Wagner Electric Corporation

6470 PLYMOUTH AVE. . ST. LOUIS 33, MO.

K50-0

# **How to Balance Heavy-Duty Brakes**

Continued from Page 111

Oaden says some imbalance is due to lack of standardization in operating pressure between makes. As a result, "correction may lead to changing of several valves on the vehicle. Unfortunately, in the past, various manufacturers of emergency relay and relay valves have paid little attention to what the other manufacturer was doing insofar as "crack" pressure (the pressure at which the valve starts to deliver air to the chambers) and differential of pressure (the difference in air pressure on the application line versus the air pressure delivered to the brake chambers) was concerned.

"There is little a maintenance man can do other than choose one or the other of the many valves as standard. Where the maintenance man becomes stymied is that in a mixed fleet, very frequently there will be several types of valves delivered on the new equipment unless the operator specifies the valve make at the time of purchase of trailers. If the operation requires interchange of equipment, the maintenance superintendent is again stymied since he has no control over what some other operator may use as his standard.

"We, as fleet operators, should constantly be telling the manufacturers of brake apparatus that above all things they should get together and decide upon a crack pressure and a differential pressure for all valves that would be within say 3 and 5 lb between all makes of valves. Until this is accomplished, complete balance insofar as air pressure during the average application will be nearly impossible.

"At the time of brake overhaul the drums should be checked and if a drum is worn more than 1/8 in. in its sweep surface, which would amount to 1/4 in. in total diameter, it should be replaced with a new drum. Drums that have an exceptional amount of heat-checks that have penetrated the drum to any noticeable extent, should also be replaced. Heat-checks that have penetrated any depth into the drum will certainly cause a drum to fail before the next brake lining is required. Further, excessive heat-checking in the sweep surface of the drum causes the linings to wear much faster than normal.

"One further thing in reconditioning the foundation brake I advocate is use of a brake lining grinder set to the exact size of the brake drum. With the lining expanded, grind until at least 80 per cent of total contact is accomplished with the brake drum. Unless this is done, it

(TURN TO PAGE 162, PLEASE)

# BOOKBORD





Spring Loaded





Oil or Dry Multiple Disc

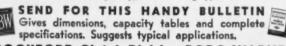
# **Double Plate Clutch Provides More Torque** With Less Size

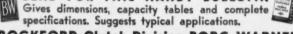
Used in a large crawler-type tractor, this Double-Plate ROCKFORD Morlife CLUTCH (Utilizing two MORLIFE® platesequipped with button type facings) provides 100% more torque capacity than previous clutches of same diameter, 400% more service life and 50% more heat resistance are other features of this Heavy-Duty ROCKFORD Morlife CLUTCH. A brake plate is mounted on the heavy-duty, ball bearing type release sleeve.



Heavy Duty

Take-Offs



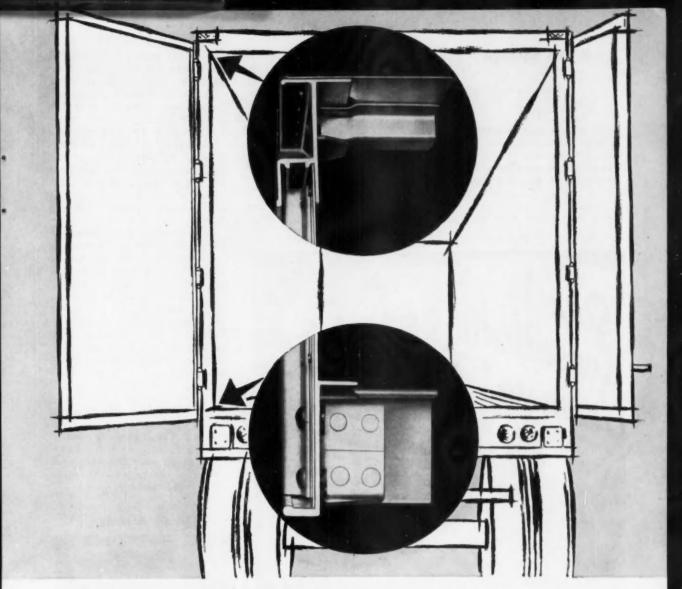


= 1335 Eighteenth Ave., Rockford, III., U.S.A. =









NEW Brown XW Exterior-Post Trailer

# 94" Inside Width...

NEW design features give extra capacity with sidewall strength and light weight

Illustrated above you see some of the important construction details of the new Brown XW Trailer. The special shape of the extruded aluminum side rails gives great strength, forms a perfect moisture seal at top and bottom. High tensile steel floor sills, aluminum side and roof stiffeners and clad aluminum skin are riveted to side rails to form a continuous structural circle around the trailer. Rear frame is unitized high tensile steel, offset to receive and protect the rear doors.

This new construction gives important extra capacity and light weight. The 94" width and 96" height means you can carry a full extra tier of many stand-

ard size shipping cartons.

The new exterior-post Model XW Trailer is available in standard lengths up to 40 feet and has Brown's new light weight Model 205 short beam tandem suspension.

Full details on the new XW Trailers are available from the Brown Sales and Service Branches in the following cities: Linden, N. J., Charlotte, N. C., Nashville, Tenn., Cleveland, Ohio, Chicago, Dallas, Denver and Oakland.



Brown is a registered trademark of

CLARK EQUIPMENT COMPANY BROWN TRAILER DIVISION Box 410 Michigan City, Indiana

Be SURE to get a quote from BROWN

#### . . . Brake Balance

Continued from Page 160

leads to very high concentration of heat in certain areas of the brake lining and brake drum which lead, in many cases, to disintegration of the brake lining in certain spots, plus heat-checking of drum."

And don't forget slack adjuster

maintenance, says Bassett. "If not of the locking type, be sure that the detent ball springs are proper weight, otherwise the brakes will back off and require frequent adjustment. Camshafts should be checked for misalignement, for a bent or misaligned shaft can absorb almost all the cam torque developed in normal application.

"I have left until last the question of brake cams. They are a very controversial subject. To function properly they must have an accurate contour which requires precision tools to produce. These tools are not usually available in maintenance shops. I believe that trying to regrind a cam contour is false economy. When they develop soft or flat spots they should be scrapped and replaced. Remember that what one small accident can cost is far greater than the cost of a new pair of cams."

Ogden seconds this warning on worn cams. Says he, "I want to call your attention to how important it is to have the brake cam slide surface completely smooth. Visualize, if you will, a little flat spot or hump on the surface of the S-cam which may be only 0.010 in. high. Visualize what happens when the brake shoe roller comes to this high spot and must jump over it before pressure can be exerted.

"What really happens is that the brake only partially applies. The lining is finally scuffed off until the brake roller can jump up over this high spot before the brake actually oper-

(TURN TO PAGE 168, PLEASE)

#### License Anybody?



This is only one-tenth of the total license plates needed by Pacific Intermountain Express each year. The fleet's licensing bill surpasses total fees paid by all the automobiles in either Wyoming or Nevada. Annual highway user and property taxes for average line haul tractor-trailer exceed \$3500.







The UNISTEEL SPACEMASTER, all aluminum—one model of the world's largest family of steel and aluminum van bodies. Lengths from 12' to 24'; width 92"; heights 78", 86". Also, a wide range of rear end, lining and accessory options.

#### Carry more cargo...at no extra cost

You can get a space bonus in van bodies, too. Unisteel's clear span construction gives you more cargo space, resulting in a more profitable payload. For example, a 14-foot Unisteel Spacemaster body offers you 23 cu. ft. more usable cargo area <code>inside</code>—with the doors closed. Compared with other bodies, this means one free load every 28 trips! Ask your nearby Unisteel distributor about the many other advantages of Cargo Engineered Unisteel Van Bodies.



UNISTEEL BODY CO.

GALION, OHIO . Factory at Wapakoneta, Ohio, U.S.A.

STEEL OR ALUMINUM VAN BODIES . LEVEL FLOOR . WHEELHOUSE . CLOSED TOP . OPEN TOP . REFERS . EXTERIOR POSTS . SMOOTH PANEL . RIBBED PANEL . PERTICAL PANEL . BEVERAGE - MUMEROUS OFTIORS

COMMERCIAL CAR JOURNAL, July, 1959

163





REPUBLIC STEEL LOCKERS offer fleet operator and terminal management decided advantages in service and economy. Big and roomy, strong and sturdy, ventilated, and Bonderized for greater protection against rust and corrosion. Available with any of the popular locking devices, Republic's Berger Division Planning and Engineering Service will help you with locker planning. Send coupon for data.



TRUSCON STEEL "BUDGET BUILDINGS" are the fast, economical way to provide housing for field offices, warehouses, garages, other commercial car operations, and at the lowest cost! Available with three-week delivery. Call your Republic-Truscon representative or write, Send for attractive brochure. Use coupon.

# STOCK...STORE...SAVE

# through Planned Storage and Republic Parts Bins

Turn your inventory stock and store control problems over to experts. Save valuable fleet maintenance time with Republic Planned Storage and Republic Parts Bins.

Republic's factory-trained experts design bins and shelving from Berger's big line of standard steel stockroom equipment—with a place for everything, and everything in its place. Space is utilized efficiently. Parts and numbers can be tagged easily for quick identification.

Never obsolete. Republic Flexi-Bilt Parts Bins are designed and manufactured to provide complete flexibility in meeting changing stock and store problems. Shelves can be rearranged in seconds. No tools required. Simply lift, pull, and reposition.

Planned storage with Republic Parts Bins offers the added advantages, economies, and conveniences of tell-at-a-glance inventory. They remind you when to re-order, what to re-order to keep rolling stock on the go. And they reduce the problems of lost, strayed, and stolen stock.

Your Republic-Berger representative will recommend and furnish the factory-approved Berger standard steel units to meet your particular needs and service. And, he will handle all the installation details. FEPUBLIC STEEL CORPORATION

18T. CL-7511

441 REPUBLIC BUILDING • CLEVELAND 1, OHIO

19caes send information on the following

1 Republic products: Republic Stainless Si

1 Republic Planned Storage | Republic Stainless Si

2 Republic Steel Lockers | Republic Parts Bins

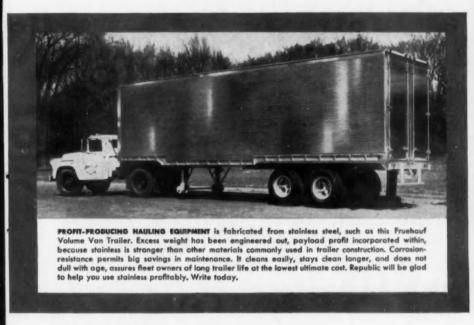
3 Truscon "Budget Buildings" | Title

1 Truscon Title

1 Truscon State

1 Truscon State

CALL YOUR REPUBLIC REPRESENTATIVE, OR WRITE . . .



# JUNG-SOL 536 o-Termi

For replacement in vehicles originally equipped with standard two-terminal flashers

Like the three-terminal 534 and 535. it's built with twice the life of other flashers

For the first time ... a two-terminal heavy duty flasher that meets the requirements of the biggest part of the truck replacement market as well as the vast majority of passenger car trailer applications - U-haul, boat and house trailers.

The new Tung-Sol 12-volt 536 is identical in performance with the 534 three-terminal type: It flashes one to six 21cp or 32cp lamps without a perceptible change in the flashing rate . . . delivers an instantaneous four-lamp emergency warning . . . lasts twice the life of other flashers . . . insures more positive action and great dependability. Electroswitch Division, Tung-Sol Electric Inc., Newark 4, New Jersey





TUNG-SOL-First in Flashers

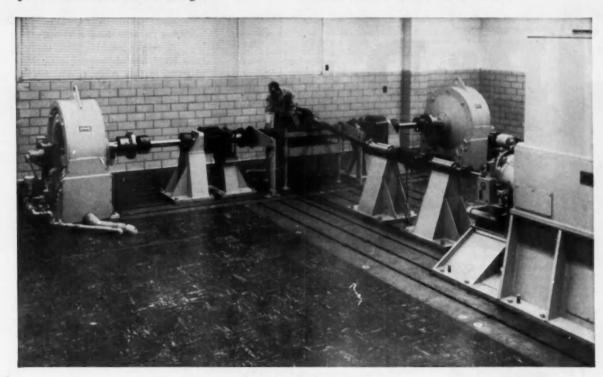
# Gives a year's punishment in a week to make sure TIMKEN® bearings last

(Another reason why Timken® bearings are first choice with truck manufacturers)

O make sure Timken® tapered roller bearings last longer, we designed this 700 h.p. dynamometer that can give bearings a year's punishment in a week. It tests bearings, gears, axles, spindles, transmissions and other drive units under conditions tougher than those met in actual service. From this we get accurate information on fatigue life, efficiency, lubrication and deflection of component parts. This axle and transmission dynamometer, located in our new Customer Research Center, is the most modern and one of the largest in the bearing industry. It's one of the many extra things we do to assure longer life and better performance with Timken bearings.

Timken bearings are precision-made from start to finish. We even make our own fine alloy steel to assure its top quality; and we're America's only bearing manufacturer that does. This is another reason why Timken bearings are first choice with truck manufacturers.

When you need a tapered roller bearing, specify Timken bearings. Get the bearing that costs less in the long run. For useful service information, send for free booklet, "The Care and Maintenance of Timken Tapered Roller Bearings in Automotive Equipment". Write Dept. JCC-7. The Timken Roller Bearing Company, Canton 6, Ohio, Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".



SINCE THEY'RE BEST WHEN THE TRUCK IS NEW, THEY'RE **BEST FOR REPLACEMENT, TOO!** 



TAPERED ROLLER BEARINGS ROLL THE LOAD

#### . . . Brake Balance

Continued from Page 162

ates satisfactorily. Personally, I prefer to see manufacturers grind the surface on the new brake cam. However, some manufacturers do not, and in many cases, the surface of the cam is less than perfect when it is new. I have personally criticized several

manufacturers for this rather sloppy practice. If more of our maintenance people would criticize defects of this type, I am sure the manufacturers would take steps to correct it."

By following these procedures, you should obtain fairly good brake balance. However, there are other items that should be considered. For example, says Bassett, "If the driver of a combination vehicle insists upon using the hand control valve, your

perfect balance is out the window. Another set of circumstances that can upset overall balance is the various friction value of different makes and types of lining."

As might be expected. fleet operator Ogden is more critical of lining problems than lining maker Bassett. Ogden says, "At the present time, the operator is somewhat at a disadvantage. since there is no scientific method for him to order brake lining that has a specific coefficient of friction and specific fade characteristics. About the best the operator can do is specify high, medium or low friction lining. If he always bought his lining from the same source, he might reasonably expect to secure the same frictions on two different orders.

"I might mention that there is a light ray of hope shining, however, in this respect. The Society of Automotive Engineers has recently developed a standard method of testing the coefficient of friction of brake lining and also the fade characteristics.

"There is now before SAE's Technical Board a proposal that a special committee be named to set a standard numbering system so that all linings coded within certain numbers should come within a certain narrow limit of performance. When this has been accomplished, we as operators can aid terrifically in its use by specifying our lining requirements by the code numbers. Manufacturers who do not have the linings coded will soon find it to their advantage to do so, since by not doing so, they will no doubt suffer saleswise."

END

Please Resume Reading Page 112

cci

Truck Terminal Mgr.: "You're studying accounting now, aren't you?"

Son: "Yes, sir."

Truck Terminal Mgr.: "Then start accounting for the brassiere and pair of panties in your laundry last week."



# CUT BODY REPAIR TIME IN HALF WITH **NEW BLACK & DECKER METHOD!**



1. Remove paint with B&D Dustless Belt Sander and 16 or 24 grit opencoat abrasive until bright. Flip easy-operating lever and change to 50 grit paper.



2. Create gradual indentation from outside of area to middle and fill with resin. Remember to overfill! Dry with lamp or Butane torch. You are now ready to finish.



3. Finish sand with B&D Belt Sander. Note how dust is carried away from the work: how Sander front pulley allows you to get into tight spots!



4. On rips and tears, weld, then bump damaged area below level of surrounding metal Annly resin, then sand with B&D Belt Sander and 50 grit paper!



1. After removing point with B&D Belt Sander and 16 Grit Paper, cross sand in both directions (24 grit) to "mark." Handy knob gives full command of the job.



2. After dinging, repeat cross sanding to recheck. B&D's exclusive gearless transmission keeps your work free from grease or oil spots;



3. Work out "chalked" irregularities. Note that B&D's flush side and front belt pulley allow you to work right to edge of the work, give you smooth, even sanding!



4. Flip lever and replace belt with 50 grit for feathering and sand-Prime coat follows. changes are easy; belts last longer with B&D's Dustless feature!

# So dustless you could paint as you sand

Whether you select the new, fast resins or lead, you'll see a big difference when you use the Black & Decker Dustless Belt Sanding method. It's so dustless, many shops even paint as they sand . . . so fast, most shops even cut job time in half! See it in your own shop. Remember, the best equipped shop gets the business profits!

THE BLACK & DECKE (In Canada: Brockville		ept. 5407, Towson 4, M	d.
☐ Set up a free demo	onstration of the	B&D Dustless Belt S	ander for me
☐ Send me informat	ion on		**********
Name	************	Title.	
Company	***********		
Address	**********		***********
City		Zone	.State
	Top.	all o	701P
4 1	1	75	7
☐ Vacuum Cleaners	☐ Polishers	☐ Impact Wrenches	C Drills

# Now...another great unconditional ROAD-

Look for this emblem ...



# It means Higher Capacity to resist impact

-built into Gates Nylon Super Cross-Bar Tires, and all other Gates Truck Tires bearing the HC emblem, by Gates advanced HC 'High Capacity' Process.

Through this newly developed technique, the thousands of tempered nylon cords in the tire body are pre-tensioned in place within the tire.

As in the most modern steel-and-concrete construction, pre-tensioning equalizes internal stresses, distributes loads evenly, and permits each member to carry its full share of stress. Result: far greater ability to withstand stresses of all kinds-particularly road impact!

Built by the makers of famous

BELTS

and Gates Tandematic Drives

Gates HC Cargo Tire



Gates HC Super Cargo Tire Gates HC C-T Rib Highway Tire

**Gates HC Commando Commercial Tire** 

When ordering new equipment, always specify

**Gates (HC) Nylon Truck Tires** 

Gates

# tire that carries Gates -HAZARD guarantee! New Gates Nylon Super Cross-Bar

Built by Gates advanced HC 'High Capacity' Process, a post-curing step in manufacture which pre-tensions the thousands of tempered nylon cords within the tire.

Longer life, greater retreadability: Pre-tensioning equalizes the load-carrying ability of the cords, giving this tire far higher capacity to resist impact damage, longer casing life, and greater retreadability than conventionally-built nylon truck tires!

60 percent greater depth in the new, flatter, wider tread gives longer original mileage than standard truck tires—and the continuous centerrib eliminates danger of circumferential cracking. Advanced tread design, with multiple sipes, gives positive resistance to side-slip!

100 percent nylon cord body, tougher tread rubber, advanced tread design—add them all to Gates HC 'High Capacity' Process, and you have the ideal tire for driver wheel use in long-distance highway hauling...a tire with 'lower cost per mile' written all over it!

Ask your Gates Distributor about new Gates Nylon Super Cross-Bar Tires today. Look for his name in the Yellow Pages of your phone book—or write direct to Gates for your FREE copy of Gates Truck Tire Service and Engineering Data Book.

The Gates Rubber Company
Sales Division, Inc.

Denver, Colorado

## GUARANTEE

Covers not only defects in workmanship and material, but all road hazards—blowouts, bruises, rim-cuts, etc., for full tread life. No time or mileage limit. Should the Super Cross-Bar Tire fail for ANY reason, you will receive a new tire at once, with full credit for unused mileage, based on Gates standard adjustment schedule.





# Highway Costs Are Going Up

Continued from Page 105

line, both the Senate and the House gave the fuel tax increase the "hot potato" treatment... they dropped it. (Continued in effect for at least another year, however, are all the highway-use excise taxes you have been paying.)

But it isn't dead. Congress

could incorporate it or one of the following alternatives as it debates the biennial highway authorization bill this month.

By deciding to

stretch-out the building program, Congress could duck the financing problem ... except for the continuing present federal highway-use excise taxes.

For the entire revised program, National Highway Users Conference has estimated an added seven years . . . with completion in 1979 instead of 1972.

Borrowing to keep

the program on schedule is presently forbidden by the Highway Act of 1956. This could be changed. Money could come from general revenues or from a bond issue, more likely the latter if borrowing becomes the answer.

One plan suggested to the Senate calls for issuing short term treasury notes to the tune of up to \$5 billion. Principal and interest would have to be paid back by 1972. To do this plus finish the program by 1972 means, of course, an increase in taxes.

Another alternative

suggests retaining the present taxes in effect beyond 1972 to payoff highway building bonds. To do this, if the interest rate is assumed to be four per cent, the National Highway Users Conference says, "The amount of interest involved is \$9,056 million. The total borrowing . . . could be repaid by 1982."

Adds NHUC, if primary and secondary highways are not financed from the Highway Trust Fund after 1972, financing ". . . could be completed by the end of 1979."

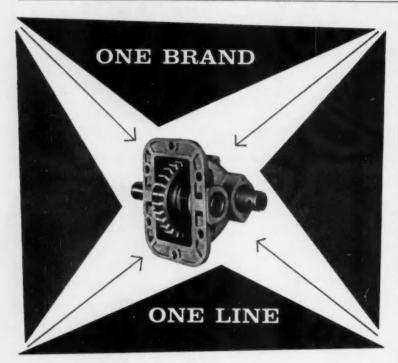
Funds could come

from highway-use excise revenues not now going into the Highway Trust Fund. Among these are the 10 per cent on new passenger cars, the eight per cent on parts and accessories, half the 10 per cent on new trucks, busses and trailers, and the 6¢ a gal on lube oil.

This would add \$1 to \$1.4 billion a year to the Trust Fund presently ... more as traffic volume increases. This could be enough to finance the revised program on schedule without a tax boost.

Most of the

financial burden of the present highway program is being carried by highway-users. Naturally they'd (TURN TO PAGE 176, PLEASE)



# COMPLETE line for all applications TULSA POWER TAKE-OFFS

The complete line of Tulsa Power Take-Offs means one brand — one inventory — of highest quality, top performance power take-offs. Our ten series — and the many models within these series — provides a power take-off for all types of work and for most transmission applications. Application information for all trucks is revised annually—or more often when necessary — and is available when new truck models are released. For a complete line — with maximum interchangeability — it's Tulsa Power Take-Offs!

## Tulsa Winch

DIVISION OF VICKERS. INCORPORATED . TULSA, OKLAHOMA



Kentucky Manufacturing Company, Louisville, Kentucky, built this trailer with USS MAN-TEN Steel to gain strength without adding weight.

# USS

# MAN-TEN Steel cuts trailer weight - boosts payload

This steel trailer is strong and rugged, yet light because all the cross members and posts are USS Man-Ten High Strength Steel. Man-Ten Steel has a 50,000 psi minimum yield point which permits thinner, lighter steel sections—reducing weight as much as ½ with no loss of strength. And every pound that is cut from the weight of the trailer permits an extra pound of payload.

Trailers with High Strength Steel construction are not high priced. When builders reduce weight as little as 16% with Man-Ten Steel they use less steel, and their total steel costs are the same as those for carbon steel. Since Man-Ten Steel frequently reduces weight more than the 16% break even point, use of the stronger steel actually can save money.

Ask your equipment supplier about construction with all three brands of USS High Strength Steels—Cor-Ten, Tri-Ten, and Man-Ten. Each has characteristics that make it ideal for application in trucks and bodies. Ask, too, about USS "T-1" Constructional Alloy Steel and USS Stainless Steel. See how this "family of steels that do more" can improve your fleet.

USS, COR-TER, TRI-TER, MAR-TER and "T-1" are registered trademarks

United States Steel Corporation — Pittsburgh
American Steel & Wire — Cleveland
Columbia-Geneva Steel — San Francisco
Tennessee Coal & Iron — Fairfield, Alabona
United States Steel Service Centers



**United States Steel** 



# because...

. . . it's  $^{15}\!\!/_{16}$ " thin. You could put a Lo-Boy L48 Marker Light in your pocket without showing a tell-tale bulge. But it belongs on trailers and truck bodies. It's so thin that it doesn't protrude beyond the body ribs—can't be smashed during maneuvering. And there's no protruding socket inside to be damaged by shifting cargo. It's maintenance-free, too! See your jobber. Ask to see all five models in the 48 Series Marker Lights:

LO-BOY MODELS

L48—only  $^{15}\!\!/_{16}$ " thin, lifetime construction, no protruding socket. DL48—same as L48, double-bulb model—double safety.

48—lifetime construction, even the screws are stainless steel.

REGULAR MODELS

48F—same as 48, with no protruding socket.

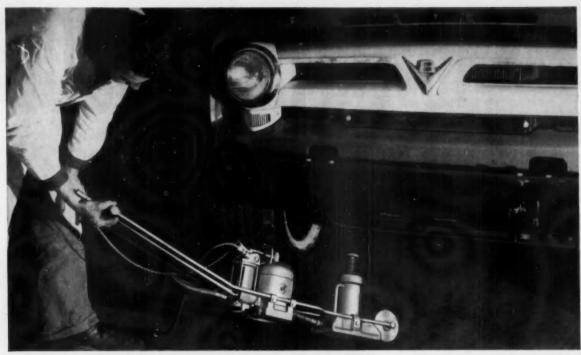
D48F—same as 48F, double-bulb model—double safety.

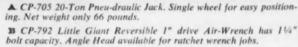
EACH MODEL IN THE 48 SERIES FEATURES UNIVERSAL MOUNTING.

Arrow Safety Device Co., Georgetown, Delaware.

designs with the FLEET in mind!

COMPLETE AUTOMOTIVE LIGHTING SYSTEMS
SAFETY EQUIPMENT AND MIRRORS

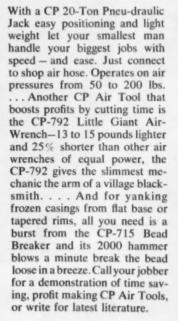




© CP-715 Bead Breaker works frozen casing loose with combined hammering and prying action. Net weight only 32 lbs.



these THREE
AIR TOOLS
save TIME step-up
PROFITS





# Chicago Pneumatic 8 East 44th Street, New York 17, N. Y.

AIR AND ELECTRIC IMPACT WRENCHES . PNEU-DRAULIC PUMPS AND TRUCK JACKS . ZIP-GUNS . BEAD BREAKERS

## Highway Costs . . .

Continued from Page 172

like to see those who benefit by the new highways share this burden. So far there hasn't been much real activity in this direction . . . but more could be generated before 1961

U. S. Chamber of Commerce has switched its stand. Up until May this year, it advocated increased user taxes as the answer to highway financing. Its new policy says increased highway cost should be borne both by highway users and by those "deriving demonstrable and direct benefits from such highways."

#### Also on record

as opposing a federal fuel tax increase and asking for financial support from non-users are . . .

- National Assn. of Motorbus Operators.
- American Automobile Assn.
- · National Grange.
- American Farm Bureau Federation.
- American Petroleum Institute.

#### American Trucking

Assns.' position was made clear in a formal resolution adopted at its annual convention last fall in Miami Beach, Fla. Last paragraph of this reads . . .

"Resolved, that the Board of Directors of American Trucking Assns., in convention assembled this 21st day of November, 1958, records its opposition to any increases in federal taxes on highway users until such time as non-highway user beneficiaries are meeting their tax responsibility for highway benefits, and the nondedicated taxes on highway users have been placed in the Trust Fund."

Any solution to the financing problem, both by the present Congress for the next two years and by the Congress in 1961 when it attempts to iron-out the balance of the program, is apt to be a compromise of all the possible alternatives . . . that could be changed by subsequent Congresses.

#### END

Please Resume Reading Page 106

# BUY ON PROOF



SEIB

COMMERCIAL CAR JOURNAL, July, 1959

# OF PERFORMANCE

# SEIBERLING'S all-new TRANS-RIB TRUCK TIRE

... guarantees lower-net-cost per mile operation

You can't make "extra mileage money" on claims...you want proof! And you have it—with the all-new Trans-Rib, the express truck tire with extra deep tread, built for long-distance, heavy-duty driving.

Our exclusive "two and two" program gives you proof of Trans-Rib performance ... guarantees cash savings to you. Here's how you can "prove-it-to-yourself":

Let us equip your trucks with two Seiberling Trans-Rib tires on one side; two tires of the brand you are presently using on the other side. We'll make periodic inspections for the life of the tires and compare the cost per thousand miles of operation. We'll prove you save with Seiberling or you will receive a cash refund on the basis of the percentage cost per thousand difference between your present tires and Seiberling Trans-Ribs.

You can't lose with "two and two"! You can find the answer to lower cost per mile operation with the Seiberling all-new Trans-Rib.

Get the complete "proof of performance" story on the Trans-Rib from your Seiberling dealer, or contact Truck Tire Department, Seiberling Rubber Company, Akron 9, Ohio.



MAKERS OF AMERICA'S FINEST TIRES

ERLING

COMMERCIAL CAR JOURNAL, July, 1959

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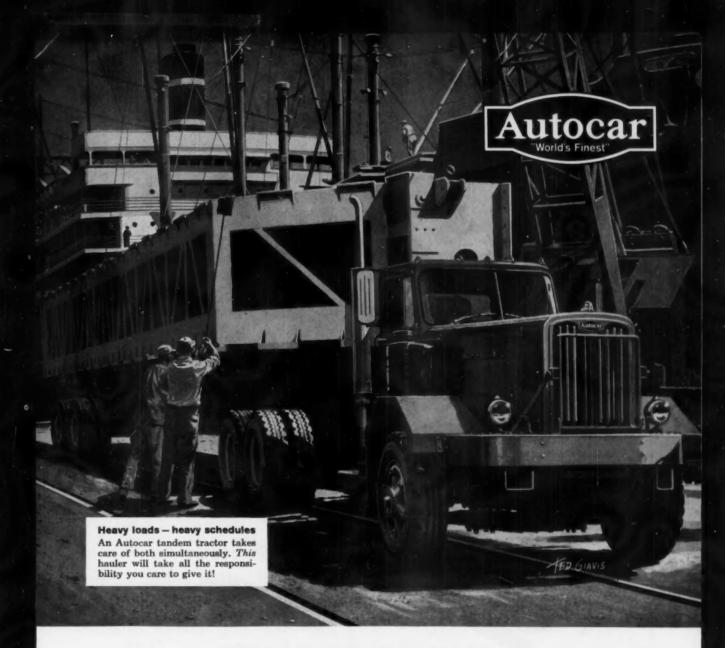
... as "checkmate" is the last word in a chess game ...



TOUGH
RESILIENT
EASIEST
MAINTENANCE

BRAKE DRUMS

AUTOMOTIVE WHEEL DIVISION ERIE MALLEABLE IRON CO., ERIE, PA.



# If you can hoist it . . . you can haul it with Autocar!

Got a job hauling a complete electric substation—a cracking-plant tower—structural steel? These are the jobs—the tougher, harder hauling jobs—that an Autocar does best!

Every Autocar is custom engineered from road to roof . . . even to such details as heat-treated nuts,

bolts and lock washers to keep parts permanently tight. Actually built like a skyscraper!

Autocar's heavy-duty components
—properly balanced and integrated
for your jobs—assure you of maximum durability and quality with
minimum time out. Just what's need-

ed to stand up years longer than ordinary trucks!

Structural steel girders to shovels to pile drivers—if you can hoist 'em, you can haul 'em with Autocar! Many jobs are too tough for anything but the best. And the best is Autocar... "World's Finest".



Division of The White Motor Company Exton, Pa.

# Keep Air Out of the Coolant

Continued from Page 116

Careful filling to avoid trapping air in coolant lines higher than the fill pipe (turbocharger intercooler, cab heater and the like) also helps.

But both experts point a big finger at the radiator top tank. Says Miller: "This is by far the most common source of air in the coolant, rather than pump seals or leaking connections."

In a nutshell, here's the prob-

Horsepower of most engines has been increased through higher compression ratios, turbocharging and other means that result in hotter running power plants. Coolant pump capacity has been boosted to speed up the flow of coolant to take care of the increased heat load.

#### But as the faster

moving coolant rushes and splashes into the top tank, it gets mixed with the air there and "entrains" it. Basic problem is to keep air out of the top tank or at least be sure coolant enters the top tank under the coolant level.

This can be done with the addition of a "surge tank" and "static line." The surge tank can be separate or an addition to the radiator top tank. The plumbing is shown in the three illustrations.

Here's how such a system gets rid of the mixed-in air....

- Top tank air/coolant bleeds through a vent line or holes into the surge tank or surge space.
- Since there's no inrush of coolant, the captured air has a chance to separate out.
- The "de-aired" coolant then moves through the "static" or make-up line to the pump intake line coming from the bottom radiator tank.
- This circulation keeps air out of the radiator top tank so rush of entering coolant does not pick it up.

Note: Don't have the vent line or holes too large. This results in a loss of coolant pump efficiency.

#### END

Please Resume Reading Page 122

#### Travel-Crew Cab



International Harvester is now offering factory-installed six-passenger cabs on its medium and heavy-duty trucks. It is available on the A and B series in Model Nos. 160 and 180 and on four-wheel-drive models. The six-passenger cab increases bumper to-back-of-cab dimensions by just 36, in. Provision for 60 and 84-in. cab-to-axle dimensions is retained to permit standard body installations without requiring frame modifications in the field.

# Proved 125,000,000 Times!



BENDIX STARTER DRIVES

For nearly fifty years—and in well over 125,000,000 automotive installations—the Bendix\* Starter Drive has been proving itself the best performing drive in its field. That's why most fleet owners specify genuine Bendix Starter Drives and parts whenever starter drive service is required. They know that good service and dependable performance are essential in order to meet competition—and that, in starter drives, the best by far is Bendix. Order by name from your distributor.

\*\*BEG. B. S. PAT. OFF.

## Bendix-Elmira

Eclipse Machine Division Elmira, New York





# Here's why Bartlett Trailer uses Pittsburgh Superfine Fiber Glass Insulation exclusively

Mr. P. H. Bartlett, president of Bartlett Trailer Corporation, Chicago, Illinois, says: "Pittsburgh Superfine Fiber Glass Insulation is easier to work with than other glass insulation material. By switching to Superfine, we found our workers no longer have the problem of skin irritation from tiny glass splinters.

"Superfine's flexibility means we can fit insulation manually into curves and intricate spots without delays as would occur with rigid materials. Its lightweight factor means greater payloads for a trailer. And, because it's water-proof, flame-proof and vermin-proof, Superfine will last the life of the trailer.

"After the trailer superstructure has been built, our crews spray an asphalt sound-deadening compound over the inner surfaces of the metal. Then a six-inch thickness of Superfine—two layers of three-inch material—is set in between the channel posts, which are also filled with Superfine for additional insulation and covered with a vinyl plastic sheet which serves as a vapor barrier. A metal or plywood wall seals in the insulation."

#### **Get Quality Insulation with Pittsburgh Superfine**

Pittsburgh Superfine Fiber Glass offers many superior insulation advantages for both the trailer builder and the trailer owner. You can get complete information from your nearest PPG Sales Office, or by writing Pittsburgh Plate Glass Company, Fiber Glass Division, One Gateway Center, Pittsburgh 22, Penna.

#### PITTSBURGH SUPERFINE IS A PRODUCT OF THE FIBER GLASS DIVISION OF PITTSBURGH PLATE GLASS COMPANY

Sales Offices are located in the following cities: Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, Minneapolis, New York, Philadelphia, Pittsburgh and St. Louis





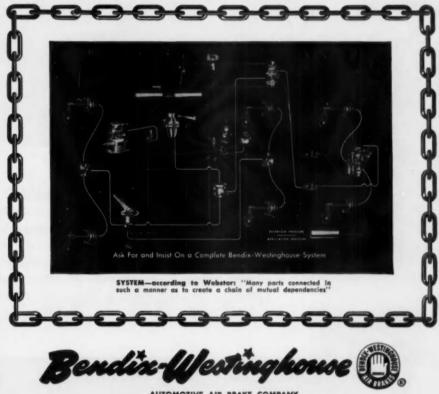


# Dependable systems demand systems planning and engineering

When safety and security are at stake, only a completely integrated system of components working together assures maximum reliability. The need for this kind of *system* performance applies to air brakes as much as to a bank vault with its precise tolerances and split-second, time-locking devices.

The efficiency of both systems depends on the close interrelation of all components or devices. By assembling individual components from many sources, you *might* build a workable bank vault or air brake system; but for maximum security and reliability, it's always to your advantage to specify a *complete chain* of system-engineered components—designed, engineered, and assembled to *work together*.

That's why more manufacturers specify the complete Bendix-Westinghouse Air Brake System for their vehicles. Fleet operators, too, know that Bendix-Westinghouse Air Brakes give top performance for a longer period at lower over-all cost. And Bendix-Westinghouse accepts full and complete responsibility for the proper functioning of the system. Proof? More vehicles travel more miles with Bendix-Westinghouse Air Brakes than with all other air brakes combined.



IMPORTANT ANNOUNCEMENT!

# From the day you buy Cummins-Diesel home to WHITE for



All White Superservice Shops throughout the United States and Canada are fully approved by Cummins Engine Company to perform initial inspection and ALL warranty work! (White has been doing after-warranty work for 5 years.)

This all-inclusive service is a big step forward by White and of tremendous advantage to all White and Autocar owners. IT BECOMES EFFECTIVE IMMEDIATELY. We suggest that you

# it, you can bring your White or Autocar "One-Stop" Service



see your nearest White branch or distributor now—for full details. Let us prove that today, more than ever, "White takes care of its own"—promptly, courteously, efficiently.

WORLD LEADER IN HEAVY DUTY TRUCKS

THE WHITE MOTOR COMPANY Cleveland 1, Ohio



# Supreme Court Finds Illinois "Mud Guard" Law a Burden on Interstate Commerce

LATE IN MAY, the U. S. Supreme Court held the Illinois "contour mud flap" law unconstitutional as being an undue burden on interstate

commerce. You'll find the following paragraphs excerpted from the Court's decision interesting in their possible effect on similar equipment.

The District Court found that 'since it is impossible for rier operating in interstate commerce to determine which of its equipment will be used in a particular area, or on a particular day, or days, carriers operating into or through Illinois . . . will be required to equip all of their trailers in accordance with the requirements of the Illinois Splash Guard statute.' With two possible exceptions the mudflaps required in those States which have mudguard regulations would not meet the standards required by the Illinois statute. The cost of installing the contour mudguards is \$30 or more per vehicle. The District Court found that the initial cost of installing those mud-

guards on all the trucks owned by the appelloss ranged from \$4,500 to \$45,840

"An order of the Arkansas Commerce Commission, already mentioned, requires that trailers operating in that State be equipped with straight or conventional mudflaps. Vehicles equipped to meet the standards of the Illinois statute would not comply with Arkansas atandards, and vice versa. Thus if a trailer is to be operated in both States, mudguards would have to be interchanged, causing a significant delay in an operation where prompt movement may be of the essence.

"It was also found that the Illinois statute criously interferes with the 'interline' operations of motor carriers—that is to say, with the interchanging of trailers between an originating carrier and another carrier when the latter serves an area not served by the former. These 'interline' operations provide a speedy throu h-service for the shipper. Interlining contemplates the physical transfer of the ertire trailer; there is no unloading and reloading of the cargo. The interlining process is particularly vital in connection with shipment of perishables, which would spoil if unloaded before reaching their destination, or with the movement of explosives carried under seal. Of course, if the originating carrier never operated in I'linois, it would not be expected to equip its trailers with contour mudguards. Yet if an interchanged trailer of that carrier were hauled to or through Illinois, the statute would require that it contain contour guards. Since carriers which operate in and through Illinois cannot compel the originating carriers to equip their trailers with contour guards, they may be forced to cease interlining with those who do not meet the Illinois requirements. Over 60 per cent of the business of 5 of the 6 plaintiffs is interline traffic. For the other it constitutes 30 per cent. All of the plaintiffs operate extensively in interstate commerce, and the annual mileage in Illinois of none of them exceeds 7 per cent of total milenge

those cases—few in number—where local safety measures that are nondiscriminatory place an unconstitutional burden on interstate commerce. This conclusion is especially underlined by the deleterious effect which the Illinois law will have on the 'interline' opera-(TURN TO PAGE 190, PLEASE)



Now is the time to get positive protection against vapor lock that causes vehicles' engines to balk and stall. During the months of June, July and August onlyStewart-Warner offers this topperforming electric fuel pump at a special hot-weather price! Install it now—for better engine performance all year long!

Here are just a few of the advantages that make the Stewart-Warner Fuel Pump your best buy:

Operates independently of engine! Fuel pump action accelerates when vapor appears in fuel line. Maintains an increased fuel flow until vapor is expelled.

**Self priming!** Starts operating the instant ignition switch is

turned. Fills carburetor float bowl before starter turns engine over. Result: smoother flow, less battery drain, better mileage.

For cars, trucks, buses! Designed for use on any gasoline engine. 6-volt and 12-volt models.

#### Call Your Wholesale Supplier Today!

Dept. UU-79, 1840 Diversey Parkway Chicago 14, Illinois





# RAMCO MODERN POWER PISTON RING SETS

Ramsey Corporation, a subsidiary of Thompson Ramo Wooldridge Inc.

How MODERN POWER rings with circumferential expansion action can sove fleets money is explained in detail in this colorful, illustrated book. Yours FREE when you mail coupon.



#### RAMSEY CORPORATION

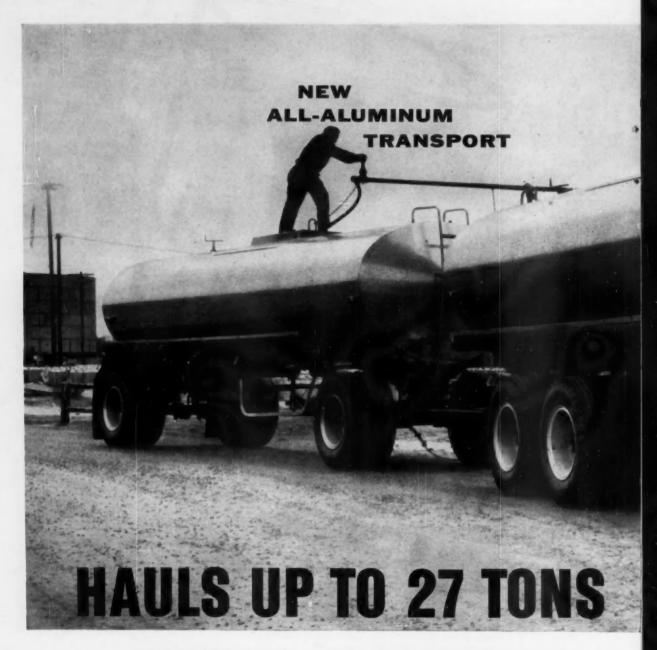
37:0 Forest Park Blvd., St. Louis 3 Mo.
Yes! Send a free copy of MODERN
POWER FACTS to:

NAME.

ADDRESS.

CITY.....

ZONE STATE



Douglas Oil Co. of California finds 6 new Fruehauf aluminum tankers also provide better service, reduce operating costs Extra payload, more efficient service and reduced maintenance costs sum up Douglas Oil Company's experience when they switched to six lightweight transports of Alcoa® Aluminum. Now boasting one of the finest operations of its kind in the industry, Douglas plans to replace many of their units with modern aluminum transports for even more profitable performance.

Douglas' extra-payload-capacity train transports are fabricated with durable, lightweight Alcoa Aluminum alloys by Fruehauf's West Coast Division. Corrosion-resistant, easy-to-clean aluminum permits the hauling of both refined products or hot asphalt without risk of contamination.

#### Aluminum wheels slash dead weight, add to tire life

By completely equipping with Alcoa Aluminum Forged Disc Wheels, Douglas further slashed dead weight by a half ton per unit, and gained 20 per cent more tread wear. Because they are precision machined to



close tolerances, Alcoa Forged Disc Wheels are true running and better balanced. This means easier steering, longer tire life, and front-end maintenance reduced to an absolute minimum. Tires also run longer because they run cooler, thanks to the rapid heat dissipation which is characteristic of aluminum.

#### Alcoa Aluminum makes the big difference in the Peterbilt trucks

Their Model 351A Peterbilt trucks, built with Alcoa Aluminum frame, cross members, cab and trim, tip the scales at 2,000 lb less per unit than similar steel models.

#### You, too, can get extra revenue

For authentic case-history reports and additional facts, write for free copies of Aluminum for Tank Trucks and Tank Trailers and The Story of the Alcoa Aluminum Forged Disc Wheel. Address—Aluminum Company of America, 1770-G Alcoa Building, Pittsburgh 19, Pa.



YOUR GUIDE TO THE BEST IN ALUMINUM VALUE

For Exciting Drama Watch "Alcoa Theatre," Alternate Mondays, NBC-TV, and "Alcoa Presents," Every Tuesday, ABC-TV



COMMERCIAL CAR JOURNAL, July, 1959

#### Supreme Court

Continued from Page 186

tion of interstate motor carriers. The conflict between the Arkansas regulation and the Illinois regulation also suggests that this regulation of mudguards is not one of those matters 'admitting of diversity of treatment, according to the special requirements of local conditions,' to use the words of Chief Justice Hughes . . . . A State which insists on a design out of line with the requirements of almost all the other States may sometimes place a great burden of delay and inconvenience on those interstate motor carriers

entering or crossing its territory. Such a new safety device—out of line with the requirements of the other States—may be so compelling that the innovating State need not be the one to give way. But the present showing—balanced against the clear burden on commerce—is far too inconclusive to make this mudguard meet that test.

"We deal not with absolutes but with questions of degree. The state legislatures plainly have great leeway in providing safety regulations for all vehicles—interstate as well as local. Our decisions so hold. Yet the heavy burden which the Illinois mudguard law places on the interstate movement of trucks and trailers seems to us to pass the permissible limits even for safety regulations."

#### **Hoof Governors**

Continued from page 114

two forces. Now the spring force is greater, and naturally opens the valve to feed more fuel to the engine in the correct proportion and at the exact instant to meet the load demand and speed requirement.

When a velocity

governor is installed on engines having vacuum operated or vacuum assisted distributor spark advance, the advance mechanism no longer functions properly unless a spark transfer control is incorporated in the governor.

This transfer control is a valve built into the governor which meters and transfers the same amount of vacuum to the distributor while the governor is throttling and the carburetor is wide open, as the carburetor would allow without the governor installed.

Without it.

the engine operates on a retarded spark, resulting in poor engine performance, higher fuel consumption and a tendency to overheat. If the spark is retarded to the point that at times the engine backfires, then mufflers and exhaust pipes have a much shorter life.

All velocity governors should be made to fail safe. To accomplish this, Hoof designed a cantilever spring. Since there are many leaves to each spring and because only one leaf would break at any one time, we are assured that in the event of a failure, the vehicle's speed would be reduced by only a couple or three miles per hour at the most.

Velocity governors are applicable and adequate for most gasoline engine driven applications, short of heavy-duty equipment. On heavyduty equipment, carburetor sizes, carburetor loads against governor and space limitations prohibit the use of this type governor.

END

Please Resume Reading Page 115



#### FRUEHAUF TRUCK BODIES

The Fastest Delivery

The Most **Options** 





Associated Transport, Inc., New York, N. Y., is one of the many highly-pleased users of new Fruehauf "Cube King" Truck Bodies.

With Fruehauf's full line of truck bodies, truck owners from coast-to-coast can get immediate delivery. It's the most complete selection ever offered . . . available at any one of 150 Fruehauf Branches, distributors and dealers.

The Fruehauf line includes closed or open top smooth panel steel "Cube King" bodies (straight-frame or wheel-housing), aluminum "Cargo Star" units with beaded or exterior post design, and sliding-panel steel "Work-Saver" beverage bodies. Single or double rear doors, side doors, tailgates, accessories and fittings, and many other optional features are available at low-cost.

The rugged steel "CubenKing" is low in price and immediately available in many lengths. The economical aluminum "Cargo☆Star" requires little maintenance over a period of many years. It is available with either steel or aluminum crossmembers.

And Fruehauf service doesn't end with quick delivery. No matter where you are, you are near expert repair work and constantly available factory parts. Painting, lettering, and washing facilities are also available at point of purchase.

Whenever you need a truck body, and want to select from the biggest line with the most options and fastest delivery, think first of Fruehauf-the first name in truck bodies.



#### FRUEHAUF TRAILER COMPANY

Detroit 32, Michigan

10952 Harper Avenue SEND FULL FACTS, WITHOUT OBLIGATION, ON UNITS CHECKED:

☐ Cube□King

☐ Cargo☆Star

■ WorkSaver

Address City.

#### **July News Roundup**

Continued from Page 146

they are made of aluminum and steel, lined with plywood and floored with oak. End doors are full height and width, can be locked.

#### Aero Mayflower Expands Container Use

INDIANAPOLIS, IND.—Aero Mayflower Transit Co. has on order 892 containers. They weigh 1600 lb each, have 348-cu ft capacity, measure slightly over 7 x 7 x 7 ft. Most, 792 of them, will come from Highway Trailer with the balance of 100 from a German manufacturer. They'll be used in overseas movement of household goods.

#### Reynolds Describes New Bulk Container

RICHMOND, VA. — Reynolds Metals Co. is testing a new bulk, dry cargo container. Prototype was built by Brown Trailer Division, Clark Equip-Co., will be used by Rock Island Railroad to haul granular malt to St. Louis breweries. Says Reynolds, interlocking snap-fit extrusions in side and end walls, corner posts and floors plus an epoxy resin seal are designed to eliminate dust-catching crevices, keep out moisture and protect against insects. New box measures 8 x 8 x 17 ft.

#### Intercity Buses Show First Quarter Boost

WASHINGTON, D. C.—Class 1 intercity carriers of passengers did better during the first quarter this year than last, reports the Interstate Commerce Commission. Operating revenue.

#### 1959 Domestic Truck Factory Sales by G.V.W.

Month January Fabruary March	42,505	6,001- 10,000 lb. 13,070 12,866 14,785 16,322	10,001- 14,000 lb. 1,038 1,131 1,266 1,328	14,001- 16,000 lb. 7,097 7,015 7,927 9,180	18,061- 19,500 lb. 7,954 8,882 11,077 11,449	19.501- 26,000 lb. 3,934 4,970 5,457 5,124	26,001- 33,000 lb. 2,566 3,150 3,952 3,866	Over 33,000 lb. 2,177 3,256 3,852 3,738	Total 81,599 83,775 93,060 58,966
Total 4 Mos. 1959	178,960	57,043 35,905	4,764	31,229	39,362	19,485 15,134	13,474 10,040	13,023 8,562	357,340 231,687

Source: Automobile Manufacturers Association.

nues were up 10 per cent . . . \$90.6 million as compared to \$82.4 million. Expenses were down 0.7 per cent . . . \$85.8 million as compared to \$86.4 million. Net result: A 10 point drop in operating ratio . . . from 104.8 in the first quarter 1958 to 94.6 in this year's first quarter.



Watson Bros. Transportation Co., Omaha, Neb.—to 19 drivers. Each received a certificate and a gold watch. Each driver has driven one million or more miles without an accident to qualify for the award.

Interstate Motor Freight System, Grand Rapids, Mich., has been awarded the Transportation Underwriters trophy for compiling more than one million continuous accident-free miles of over-the-road driving. The million mile mark was reached between Apr. 10th and 17th when the fleet rolled 1,083,016 miles without a reportable accident.

Columbus Transit Co., Columbus, Ohio—to 65 operators who were responsible for the fleet's winning a (TURN TO PAGE 198, PLEASE)

#### 1959 Truck Trailer Shipments

Type of Trailer	April	Four Months
Vans	264	
Insulated and refrigerated	406	1.553
Steel	60	208
Aluminum	346	1.345
Semi-insulated	65	236
Steel	65	236
Aluminum	00	200
Furniture	163	513
Steel	126	406
Aluminum	37	107
All other closed-top	2.457	8.825
Steel	703	2.567
Aluminum	1.754	6,258
Open-top	232	771
Steel	70	274
Aluminum	162	497
Alaman,	100	401
Total-Vans	3,323	11,898
Tanks		
Non- and low-pressure		
Petroleum		
Carbon and alloy steel	243	859
Stainless steel	32	93
Alumir um.	151	544
Total-Petroloum	426	1,496
Chemical, food, fluid solids	44	143
All other, incl. aircraft	44	140
refuelers	233	530
High pressure (LPG),	200	999
riigii pressure LPG),	18	124
chemicals, etc.	10	124
Total-Tanks	721	2,293
Pole, pire and logging		
Single axls	43	115
Tandem axle	108	283
randem a de	100	203
Total	151	398
Platforms		
Racks, livestock and stake	39	160
Grain bodies, all types	182	582
Platfe m : (flats), all types	821	3,126
Tctul-Platforms	1.042	3,868
Landa Albana barbar	-	000
Low-bed heavy haulers	280	892
Dump trailers	311	894
All other trailers	308	1,039
Total Complete Trailers	6,138	21,282
Trailer chassis	389	1,712
Total-Trailers and Chassis	6.525	22,994

Source: Industry Division, Bureau of the Census.



#### Driver of the Year Meets Nixon

Driver of the Year Carl C. Crim and his wife Steffie are presented to Vice President Richard M. Nixon. Crim, of Okmulgee, Okla., is being honored by the American Trucking Assns. for 26 years of accident free driving marked by heroic life-saving efforts on and off the highways.

# Belden WIRES - CABLES - CORDS WIRE

#### Primary Wire For the Hot Spots

#### Ask Your Belden Jobber

Engineered for use in the hot engine compartments. Silicone Rubber Insulation withstands extreme heat from exhaust, manifolds, and all other hot spots. Glass braid protects against fire, and nylan jacket resists effects of gasoline, oil, anti-freeze, and steam cleaning fluids.

#### S.A.E. Types I and II -A.T.A. Color Coding

Now available in all standard A.T.A. colors! Tough Plastic Insulation with low moisture absorption; resists flame, oil, gasoline, grease, acid, fungus, and most solvents. Flexible at low temperatures — high dielectric — high temperature stability. Sizes 20 to 8.

S.A.E. Type II extra heavy-duty construction for all frame and exposed wiring requirements. Sizes 16 to 10.

#### Neoprene Trailer Cable—with A.T.A. Circuit Coding

Two, four, six, and seven conductor flexible stranded cable for all electrical hook-ups between tractor and trailer—marker and clearance lamps, directional signals, stoplights, and auxiliary lighting. Neoprene sheathed to resist oil, grease, road tars, and weather.

Also Heavy-Duty Duplex Cable— Battery Cable—Terminals— Spark Plug Wire—Wiring Kits

One Wire Source for Everything Electrical and Electronic

Belden
WIREMAKER FOR INDUSTRY
SINCE 1902
CHICAGO

0770118



Magnet Wire + Load Wire + Power Supply Cords, Card Sets and Portable Cord - Aircraft Wires Electrical Household Cords - Electroalc Wires Wolding Cable + Automotive Wire and Cable





#### PROVED BEST FOR IMPACT RESISTANCE

In test runs over one of Nevada's toughest roads, nylon cord tires and tires made with TYREX viscose tire cord slammed into rock outcroppings at speeds up to 45 mph. Result: tires with TYREX viscose cord sustained up to 60% fewer bruise breaks!



#### PROVED BEST FOR CITY DRIVING†

Tested on New York City taxi fleets, in 16 million miles of rough and tumble midtown driving, tires made with TYREX viscose cord averaged 11% more mileage on their original treads than nylon. 96% proved suitable for recapping and many are now running on their third recap.

Get more tire power...less downtime... with the toughest tire cord ever made—as proven by test. Specify tires made with TYREX viscose tire cord—the great new cord that makes tires run cooler, smoother, quieter—longer and safer—without flat spotting.





#### PROVED BEST FOR TRUCKS†

On trucks gradually overloaded from 20-to-40-to-50% above Tire and Rim Standards...on a long haul totaling 30,000 miles over a torrid Texas road (139° in places), 10 ply tires of TYREX viscose cord showed 21.7% better tread wear than 12 ply tires made with nylon—and were recappable. Also tires with TYREX viscose cord ran 10% cooler than the nylon with negligible growth (tires with nylon grew up to 41.5% more!).



#### PROVED BEST TIRE CORD OF ALL FOR STRENGTH, STABILITY, LONGER WEAR

Others can say what they will. But proof of premium quality belongs to TYREX viscose tire cord. In hundreds of torturous laboratory and field tests made with other tire cords, TYREX viscose cord has consistently and conclusively won out as the toughest and safest of all—with the full tire power needed for today's more powerful cars. And remember this: all new cars come factory equipped with tires containing TYREX viscose cord... an incontestable vote of confidence from the car makers themselves!

†In tests conducted by independent testing companies.

TYREX INC., EMPIRE STATE BLDG., NEW YORK 1, N. Y.

\*TYREX is a certification mark of Tyrex Inc., for viecose tire cord and yarn. TYREX viscose tire cord and yarn are also produced and available in Canada.

WHITE-the businessman's truck ...

# 90"dimension + ultralight weight =more payload

This new ultralight WHITE 9000TDL diesel tractor adds new dimensions to your profit.

Compact for extra payload space—only 90 inches from bumper to back of cab. Permits longer trailer—more space for cargo.

Ultralight for extra payload weight—has aluminum and fiberglass parts wherever it makes good engineering sense. Permits at least 1100 pounds additional payload.

Balanced for better payload distribution—center line of front axle is closer to back of cab. Puts more weight on front axle, less on drive axle. Permits more flexible loading. Built with heavy-duty components to haul up to 80,000 pounds GCW, the White 9000TDL is available with diesel or gas power.

For unparalleled performance and ownership profit, invest in a WHITE . . . the businessman's truck.

THE WHITE MOTOR COMPANY • CLEVELAND 1, OHIO Branches, distributors, dealers in all principal cities

WORLD LEADER IN HEAVY DUTY TRUCKS

WHITE



COMMERCIAL CAR JOURNAL, July, 1959

#### **July News Roundup**

Continued from Page 192

special award from the American Transit Assn. Nineteen drivers had no-accident records of 10 or more years.

New York City Transit Authority to 2552 bus operators for one year of accident-free driving.



Associated Transport, Inc. has purchased 125 new Fruehauf Volume Vans and 15 city delivery trailers. New tractor purchases include 100 International diesels, 64 GMC diesels (Model No. DLR-8000) and 30 Ford COE's equipped with 18 ft Fruehauf truck bodies. Total cost—almost \$4½ million.

Younger Bros., Inc., Houston, Tex., is taking delivery on 24 new COE Model No. K-521 Kenworth trucks. They'll be used to haul petroleum products.

Kroger Co., Cincinnati, Ohio, has bought 100 new Highway insulated trailers. Refrigeration equipment is in 40 of the new units. Trailers are 35 ft aluminum outer-panel Econovan models.

Hennis Freight Lines, Inc., Winston-Salem, N. C., has added 130 pieces of new equipment. New rolling stock includes 10 Model No. F375 GMC

straight trucks with Cato bodies, 50 Copco volume vans, 10 open-top Fruehauf vans, 50 Model No. H67T Mack diesel tractors and 10 Model No. 860 GMC COE diesels.

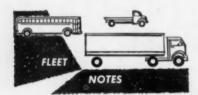
Montezuma Truck Lines, Durango, Colo., has ordered 14 Kenworth Model No. 925 trucks. They'll have the "Unitglas" tilting front-end assembly with fiber glass hood, fenders and radiator shell.

Cooper-Jarrett, Inc., has ordered 30 new Highway Econovans. They're 35 ft models, inner-panel construction. Roof has full width skylights.

Southern Tank Lines, Santa Fe Springs, Cal., has purchased 10 new lightweight aluminum truck and trailer units. Kenworth furnished the truck. Truck and trailer tanks are from Fruehauf.

Superior Forwarding Co., St. Louis, Mo., is adding 20 new 40 ft trailers to its fleet. Trailers are being made to order by Andrews Industries, Inc., St. Louis.

Baltimore Transit Co., Baltimore, Md., has bought 25 new 51-passenger GMC diesel buses for \$645,000.



Frank L. Snyder has been appointed Director of Equipment Maintenance for Boss-Linco Lines, Buffalo, N. Y. He'll control and supervise all maintenance personnel and procedures and garage purchases for the entire system. Snyder was formerly Asst.

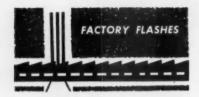
Field Service Mgr. for the White

Ryder System, Inc., is putting up billboards in 35 cities of 21 states. Each has a message boosting highway safety.

Centralia Cartage Co., Centralia, Ill., has opened a new terminal and garage in Centralia. The terminal has both hot and cold storage facilities. Garage is 60 x 120 ft, has drivethrough washing and lube lanes plus a general repair area for eight tractors.

Francis F. Smith has been promoted to Director of Vehicles, U. S. Post Office Dept.

Berman Service, Inc., Pennsburg, Pa., has acquired equipment of Trailer Leasing, Inc., Detroit, Mich., and will operate a trailer pool there.



Daniel J. Bradley has celebrated his 25th anniversary with the International Harvester Co. He has been Philadelphia Motor Truck District Manager since 1945.

AC Spark Plug Div. of General Motors is now packaging oil filters in large cartons at special prices for fleet operators.

Bustin Steel Products, Inc., Dover, N. J., announces that its line of truck and trailer safety equipment is available through Mack Truck branches and distributors.



#### World's Largest Truck!

The Berliet T-100 carries a 100 ton payload practically anywhere. Made in France, it was on display here in the U. S. at the International Petroleum Exposition. It's designed for hauling heavy oil equipment into what is often considered inaccessible areas. Truck is 18-ft wide, 13½-ft high and 45-ft long. Tires are over 8-ft high. It's powered by a 600-hp turbo-charged diesel, has a fully air-conditioned five-man cab. Tire-to-ground pressure is only 14 lb per sq in.

MATCHED TO THE LOAD ... MATCHED TO THE ROAD .

# Brockway

# LONG PROFITABLE SERVICE under the ROUGHEST, TOUGHEST CONDITIONS

Your Brockway Huskie is designed and built to haul your load over the terrain you haul it. All major components — engine, clutch, transmission, axles — are matched and balanced to give you hauling power that fits the requirements of your job. Even the famous Brockway chassis is custom built. If trucks are the tools of your business, Brockway can point your way to higher profits.

#### Some of the NEW Brockway Huskie features:

- Wider choice of power
   gasoline or diesel
- Larger cooling capacity
- Improved power steering
- All steel, Safety-View cab
  - Dual headlights
  - Step-Aside fenders
- Easy-Access maintenance

A Living Legend of the Highway for more than 45 years

BROCKWAY MOTOR TRUCKS CORTLAND, N. Y.

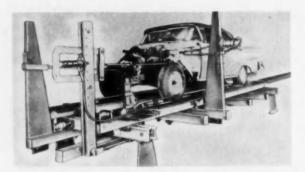
Division of Mack Trucks, Inc.



# PRODUCTS

DESCRIBING RECENTLY ANNOUNCED PRODUCTS AND EQUIPMENT OF INTEREST TO MEN CONCERNED WITH TRUCK, BUS AND CONSTRUCTION FLEET MANAGEMENT

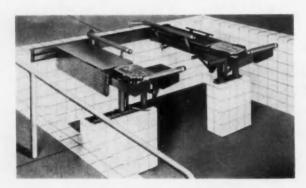
A NEW SERVICE For quick information about New Products you're interested in, FOR READERS | phone or write the person named directly below the description



#### Frame and Body Straightener

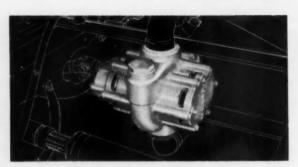
handles unitized as well as conventional bodies. The new "Bearcat" combination straightener features a new systematic way of locking down vehicles and applying correct pressure at the right spot without distorting other parts of the vehicle, says Bear. By hooking up to the Hi-Power Towers, it's possible to pull many places at once from various levels and angles. Three 12-ton hydraulic units and a 12-ton Flex-O-Power unit supply the power. The new straightener is said to make body and frame straightening faster, easier and cheaper.

Contact Cecil Goldschmidt, Adv. Mgr., Bear Mfg. Co., Rock Island, Ill.



#### Adjustable Wheel Alignment Outfit

handles all automobile wheel treads from 421/2 to 65 in. Named the Weaver Model No. WJ-121 Floor Level alignment outfit, it handles everything from the small cars up to the wide track Pontiac. Rack weight is carried on ball bearings on the front end and automatically retract when the rack is loaded. Rack is easily moved by hand and has a lock at the front to prevent the runway from moving. Contact E. V. Eastman, Weaver Mfg. Co., 2166 S. Ninth St., Springfield, Ill.



#### **High Capacity Tanker Pump**

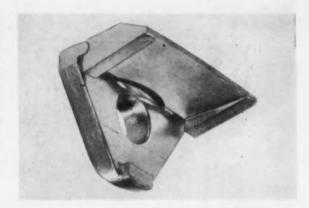
is designed especially for fast unloading of over-the-road tank transports. Made by Waterous Co., the lightweight pump has a capacity of 300 GPM and weighs 70 lb. The Model No. HJ700 is mounted inside truck frame rail. Dimensions are 11% in. high, 11 in. wide and 17% in. long. Three-lobe rotors are driven independently and do not depend on the product being pumped from lubrication. Rotors handle high viscosity petroleum or chemical products without enlarging pump's internal clearances. This is said to keep top performance when pumping lighter

Contact William Dreher, Adv. Mgr., Waterous Co., 80 E. Fillmore Ave., St. Paul 7, Minn. Phone: CApital 4-1377.

#### Two-Piece Wheel Clamp

is designed to eliminate wheel slippage, broken studs and clamps on cast spoke wheels. Called the Wedgemaster, it compensates for variations in rim, wheel and spacer size. Equal torque is put on each spoke. The two-piece clamp is said to seat perfectly between the spoke and rim of the wheel and requires no retightening after initial installation. Two basic universal male levers for either % or %-in. studs, plus a wedge, make up the clamp assembly. Wedges are made for various spacer widths. The Wedgemaster is interchangeable with all one-piece clamps.

Contact Hugh Schierling, Vice Pres., Sales, Manufacturer's Machine Co., 139 S. Hatfield St., Dayton, Ohio. Phone: AMherst 8-4266.



#### Pin and Rod-Reconditioning Gage

measures clearance fit on all pins and rods and sizes the journal end of rods. Made by Sunnen, the gage has interchangeable points covering a 3 in. range from 0.375 in. to 3.375 in., ID. A color dial indicator shows interference fits in red, clearance fits in green. Gage can be used for fitting new Press-fit rods. It can also be installed on older Sunnen AG-300 Series gages.

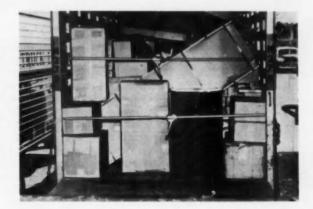
Contact C. E. Thorup, Adv. Mgr., Sunnen Products Co., 7910 Manchaster Ave., St. Louis 17, Mo. Phone: STerling 1-2100.



#### **Cargo Locking Device**

holds loads securely in place during transit and keeps cartons from falling out when doors are opened. The Load Stop cargo locking device has a friction type jack which is installed between truck or trailer body sides in 15 seconds. It's made of steel, weighs 15½ lb, and has rubber pads on each end. Closed Load Stop is 6 ft 8 in. long. It expands 16 in. when opened.

Contact Robert R. Horowitz, Pres., S & H Supply Co., 2966 Mayfield Rd., Cleveland 18, Ohio. Phone: FA 1-1888.



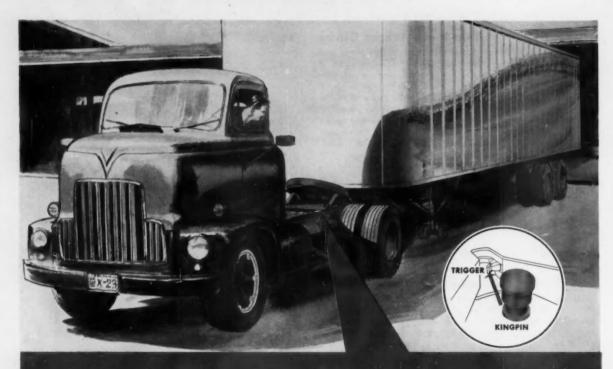
#### **Body and Motor Cleaner**

cuts vehicle and engine washing costs. Made by Balcrank Inc., the system has a Speedi-Wash air-operated pump with special cleaning compound for car, truck and bus body cleaning. Another compound is available for engine cleaning. Pump fits 15, 17 or 55 gal drums, develops up to 600 lb pressure. Unit includes a 40-ft hose with high-pressure spray nozzle which adjusts for mist or pressure spraying.

Contact Jack Weiss, Balcrank Inc., 10 Disney St., Cincinnati 9, Ohio. Phone: RE 1-7200.

(TURN TO PAGE 203, PLEASE)





### NO CHANCE OF A LOCKOUT...

that's a Fontaine No-SLACK 5th wheel

Here's how the Fontaine NO-SLACK Lock guarantees a safe connection . . . The kingpin moves into the wheel opening. When it reaches the proper position, it triggers a mechanism that sends a solid steel jaw behind the pin. (Easy does it, there's no banging or force required.) The jaw is followed by a steel wedge, reinforcing the lock and taking up slack, even on worn parts. No shims or bushings are used. Only when the kingpin is correctly positioned and fully down will the lock operate . . . there's no possibility of partial locking or lock-out. A quick visual check will tell you if the wheel is safely locked. The exclusive Fontaine NO-SLACK Lock increases safety, reduces wear on vital working parts of both tractor and trailer . . . the entire rig rides and handles better. You can actually FEEL THE DIF-FERENCE with a Fontaine Fifth Wheel!

Write today for Fontaine's Catalog of Fifth Wheels for any hauling purpose on any type of rig!

#### Fontaine Truck Equipment Co., Inc.

1232 North 37th Place

Birmingham 1, Alabama

The industry standard இற்றிகேப்பை NO-SLACK® 5th wheels



Shown here is a Fontaine No-Slack Wheel on a large, deep-ribbed mounting plate designed to cut strain on tractor frames to a minimum. This rugged 36" wheel is fabricated for enormous strength, but light weight. It comes completely assembled, weighing in at 300 lbs. Heights are 8", 9", 10" and 11". The wheel is adaptable to any truck frame and carries the famous Fontaine two year warranty.



(See also Fleetman's Library on p. 58)

Steel cord truck tire pamphlet shows the advantages and extra mileage possible using steel cord tires. Pamphlet is offered free by the Bekaert Steel Wire Corp., makers of steel cord for truck tires. Write Miss E. Moore, Bekaert Steel Wire Corp., 655 Madison Ave., New York 21, N. Y.

Tool catalog shows the Truecraft line of automotive hand tools. Tools include drop forged adjustable wrenches, slip joint and tongue and groove pliers. For a free copy, contact Paul Kaufman, Vice Pres., Truecraft Tool Co., Inc., 2425 S. Michigan Ave., Chicago 16, Ill. Phone: CA 5-2575.

Automatic transmission catalog has quick reference tables with complete listings of all seals including gaskets, oil seals and O-rings. Ask for Catalog No. 279. Contact Elliot Lehman, Vice Pres.-Sales, Felt Products Mfg. Co., 7450 N. McCormick Blvd., Skokie, Ill. Phone: RO 1-4500.

Six and 12-volt motors from Leece-Neville are described in a new brochure. It covers the company's four 6-volt models and six 12-volt motors used on most cars and trucks. Contact Harold Zusbe, Vice Pres., Leece-Neville Co., 1374 E. 51st St., Cleveland 3, Ohio. Phone: HE 1-0740.

Air purifying bulletin explains the advantages and applications for the Logan Aridifier. The Aridifier is installed in the air line between the compressor and your air-powered tools or spray equipment. It removes 92 per cent of all moisture, oil and dirt. Contact James Brost, Aridifier Div., Logan Engineering Co., 4901 W. Lawrence Ave., Chicago 30, Ill. Phone: PEnsacola 6-7500.

Exide battery catalog shows the company's complete line of car, truck, off-highway and industrial engine batteries. Contact R. A. Whetstone, Jr., Sales Promotion Mgr., Exide Automotive Div., P. O. Box 6266, Cleveland, Ohio. Phone: ULster 1-2600.

Magnaflux - Magnaglo inspection systems are described in a new brochure. System is used for detecting cracks and flaws in metal parts. For a free copy contact William E. Durack, Sales Promotion Mgr., Magnaflux Corp., 7300 W. Lawrence Ave., Chicago 31, Ill. Phone: UN 7-8000.

LP Gas trailer is the subject of a new brochure from the Mississippi Tank Co. Shown is the Load-King T1 Steel Tank Transport. Technical information and free literature are available from L. V. Clark, Chief Engineer, Mississippi Tank Co., Hattiesburg, Miss. Phone: JUniper 3-0262.

Air starting motors are described in a bulletin from Ingersoll-Rand. It has information about their advantages and applications. There's a selection list showing size and model number starting motor for use on 29 different engines. Contact John K. Uhler, News Service Dept., Ingersoll-Rand Co., Phillipsburg, N. J. Phone: GL 4-2121.

"How to Clean and Care for Industrial Floors" is the title of a new booklet from Oakite. It contains helpful information you can use in cleaning shop, terminal and office floors. Contact A. T. Thibadeau, Public Relations Dept., Oakite Products, Inc., 19 Rector St., New York 6, N. Y. Phone: WH 3-0940.

Lightweight dockboards are shown in new literature from Brooks & Perkins. The B & P Econobords are aluminum truck loading plates with capacities up to 4800 lb. Contact Ralph G. Gillespie, Public Relations Mgr., Brooks & Perkins Inc., 1950 W. Fort St., Detroit 16, Mich. Phone: TAshmoo 5-5900.

Cummins power for the oil industry, diesel generator sets, electric drilling and torque converter units are described in four new brochures from Cummins. They're available through your local Cummins distributor or by contacting the Cummins Engine Co., Columbus, Ind.

Valve catalog lists all intake and exhaust valves and valve train parts for 1958-59 car and truck engines. Industrial and air-cooled engines are included. Contact Claude E. Whipple, Sales Mgr., Rich Mfg. Co., Battle Creek, Mich. Phone: WO 2-4067.

Oil and air filter catalog shows the entire Wix line for cars, trucks, buses and construction equipment. Catalog is color-coded for quick reference. Contact Norman Hull-Ryde, Sales Promotion Mgr., Wix Corp., Gastonia, N. C. Phone: UNiversity 4-2681.

#### **New Products**

Continued from Page 201

#### **Heliwelding Outfit**

is a low-priced tungsten inert-gas set designed for small fleet shops. Called the Helicraft 100, it's priced at less than \$100. The kit can be operated from any conventional DC power source, is said to be ideal for welding light gage stainless steel, aluminum,



brass, copper nickel and other nonferrous metals. Kit contains all necessary equipment for Heliwelding in the 100 amp range and under.

Contact J. F. Callahan, Asst. Adv. Mgr., Air Reduction Sales Co., 150 E. 42nd St., New York 17, N. Y. Phone: MU 2-6700.

#### **Nylon-Coated Tarpaulin**

is reported to have a tear-resistance five times greater than canvas. Called the Herculite 80, it is suited for seat coverings, tarpaulins and similar applications where wear is unusually heavy. One bottler fleet reports that its tarp costs are reduced 200 per cent using the new fabric.

Contact Capt. Robert Berns, Vice Pres., Sales, Herculite Protective Fabrics, 125 Sussex Ave., Newark 3, N. J. Phone: HUmbolt 2-0531.

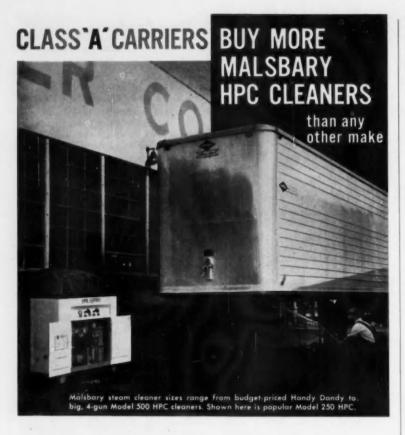
#### **Soft-Face Hammer**

has replaceable tips in medium or tough hardness which can be changed as needed for various jobs. Hammer



has a fiber glass shaft and a shotloaded head which is said to give 30 per cent more driving force. Made by the Proto Tool Co., the hammer

(TURN TO NEXT PAGE, PLEASE)



Wherever the fleet maintenance job is a continuing and really tough operation, there you find Malsbary High Pressure Combination cleaners working. The maintenance director of one of the world's largest fleets sums up the reason thus:

16 years of experience with Malsbary convinced us it's ideal for our heavy work load, 24-hour, 7-day week schedule.

The choice of Malsbary HPC cleaners by this user and hundreds of others can be your guide to better steam cleaning. Why not use our buy-and-try plan and see for yourself what Malsbary can do for you.

MONEY BACK OFFER We're confident you'll be happy with Malsbary performance in your shop. So you buy a Model 250 (or bigger) HPC and try it for 10 days; if you are not completely satisfied that it does reduce your cleaning costs, return it and our dealer will refund your money. You can't lose! Call him now (see yellow pages of phone book) or write us.

ASK ABOUT the Malsbary green steam cleaner hose . . . it's durable, oil and abrasion resistant.



**New Products** 

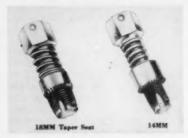
Continued from Page 203

can be used on threads, soft metal bodies and painted or plated surfaces.

Contact Jay Womack, Adv. Mgr., Proto Tools Co., 2209 Santa Fe Ave., Los Angeles 54. Cal.

Spark Plug Hole Tool

is for cleaning spark plug hole threads. A tap cleans the threads and a spring-loaded reamer cleans



the seat. Tool is made in three sizes, 14mm and 18mm for flat seats and 18mm for tapered seats.

Contact James Borland, Sales Mgr., J. Borland Machine Co., 64 Eagle St., Providence, R. I. Phone: GA 1-5018.

**Turn Signal Switch** 

is a non-canceling type which can operate all four turn signals at once for use as emergency warning signals. Called the Model No. A-2, it comes complete with flasher, lead wire and adjustable clamps.

Contact Richard T. Betts, Vice Pres., Betts Machine Co., 1800 Pennsylvania Ave., W., Warren, Pa. Phone: Warren 3-500.

**Torque Wrench** 

clicks when the desired torque is reached. There are no dials or gages to read. The Micro-Set Torque Tool



can be set for the desired torque and works in both left and right directions without adapters. It resets itself when released. Sizes offered are ¼, % and ½ in. drive with torque settings from 5 in. lb (on smallest (TURN TO PAGE 208, PLEASE)

134



PARISH Heat-Treated Siderails

... make trucks
more profitable

Parish Heat-Treated Siderails are up to 277% stronger than regular carbon steel siderails. They enable a properly designed truck to do far more jobs than carbon steel siderails can handle. And Parish Heat-Treated Siderails stay aligned, bounce back from shocks. Drive-line components stay aligned, too, and they wear longer. There's less time out for maintenance and repair, more time on the road, making a profit.

Parish Heat-Treated Siderails cost very little, compared to the extra strength they give. You get up to three times the strength of carbon steel for only 30-40% more cost.

How about weight? Parish steel siderails are practically the same weight as high-priced lightweight metal alloys.

That's why some 30 leading truck and trailer makers use Parish Heat-Treated Siderails in the equipment they offer today's trucking industry. WRITE TODAY...

For Free Illustrated Booklet. The booklet "Load and the Road" contains a complete comparison of the costs and technical factors that you need for specifying your next truck chassis.

DANA PRODUCTS: Transmissions • Universal Joints • Propeller Shafts • Axles • Torque Converters • Geor Boxes • Power Take-offs • Power Take-off Joints • Rail Car Drives • Railway Generator Drives • Stampings • Spicer and Auburn Clutches • Parish Frames • Spicer Frames • Forgings



Here's how to get your next big truck without the usual delays in delivery!



## Nationwide network of Dodge Truck Centers puts trucks and parts right in your area!

Now your local Dodge dealer can get you the truck you want—and when you want it!

Today, there's no waiting for the factory to build the exact truck you need. For the nearby Dodge Truck Center stocks tractors... big tandems...4-wheel-drive trucks...a complete line of trucks up to 65,000 lbs. G.C.W. And the Truck Center is equipped to convert these trucks with exactly the right axles, transmissions, springs, tires and other equipment for your hauling job. No more waiting for your truck order to find room on the assembly line!

You get faster truck parts service from your Dodge dealer, too, because the Truck Center supplies him with the seldom-needed, heavy-duty truck parts that otherwise would be hard to get. Everything to keep



A service unique in the trucking industry! Only Dodge has a nationwide system of Truck Centers, to give on-the-spot support to Dodge truck dealers. It lets Dodge dealers give you unmatched service in the 4-wheel-drive, medium- and heavy-duty truck field!

your truck on the job is immediately available!

Ask your Dodge dealer how his nearby Truck Center can help him give you faster deliveries of new Dodge trucks...speedy parts service...special equipment... even truck financing!

...TODAY, IT'S
REAL SMART
TO CHOOSE

# DODGE TRUCKS



#### **New Products**

Continued from Page 204

model) up to 1600 in. Ib on the largest.

Contact C. D. J. Smith, Public Relations Dir., Apoc Mossberg Co., 100 Lamb St., Attleboro, Mass. Phone: Attleboro 1-0340.

Aerosol Degreaser

is a ready-mixed degreaser packaged

CURTIS HIGH-PRESSURE

Keeps trucks, trailers and buses shining with half the effort. 300 lbs. of pressure. A real power wash! Pistol grip nozzle throws fine spray or sharp iet. Knocks off dirt, grit,

WASHER

salt deposits.

in a 16-oz aerosol can for easy use. Called Degreas-Master, it is sprayed onto parts requiring degreasing, then washed off with water. It can be used on all metals, wood, concrete or painted surfaces.

Contact John Hampshire, Treas., Rust Master Chemical Corp., 56 Creighton St., Cambridge 40, Mass. Phone: UNiversity 4-3200.

Air Wrench

is for heavy truck wheel work and spring U-bolt jobs. Made by Inger-

soll-Rand, the new Model No. 434 Impactool has 1-in. drive and is designed to give faster run-down and 25 per cent more power. It has fewer parts than previous models, is 9 lb



lighter and 10 in. shorter. The Impactool has a built-in power regulator permitting the operator to cut the power down as much as 40 per cent.

Contact William R. Karlson, Mgr., Tool Sales, Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. Phone: DI 4-6070.

Cargo Anchoring System

has anchoring rails on both trailer walls to which steel strapping is fastened. "Safe Cargo" anchoring system is made by Youngstown Steel Car Corp. and is said to be easily installed. Rails can be placed at intervals of 13½, 23¼ and 32¾ in. starting from the trailer floor.

Contact E. J. Sherwood, Sales Mfg., Youngstown Steel Car Corp., Hunter St., Niles, Ohio. Phone: OL 2-4361.

Dash-Mounted Tachometer

is transistorized, requires no sending unit, relays or batteries. Three models are available for all 6 or 12 volt.



6 or 8 cyl engines. The tach is a selfcontained unit designed for dash

Contact K. D. Fullerton, King Electric Equipment Co., 9123 Inman Ave., Cleveland 5, Ohio. Phone: Diamond 1-1066.

(TURN TO PAGE 210, PLEASE)

AMERICA'S
FLEET OWNERS.
KEEP THEM ROLLING WITH



EOUIPMENT

All the pressure your men can use for labor-saving tools.

The Curtis CV Compressor is built for fleet maintenance. Power for painting, lifts, grease-guns, impact wrenches, tire inflation! All the compressed air a shop can use all the time—The right Curtis compressor on the job assures an adequate and dependable supply of air at the proper pressure. Positive self-starting. And self-lubricating Curtis compressors (with Timken main bearings) provide trouble-free service year after year. Sizes 1/4 to 50 H.P.

Curtis also manufactures TWO POST LIFTS for trucks and buses.



CURTIS "CV" AIR COMPRESSOR



CIPTIA MANUFACTURING COMPANY
PNEUMATIC DIVISION OUR 105 1/1 YEAR

WRITE DEPARTMENT 56 . ST. LOUIS 20, MISSOURI

# "AND BE SURE IT HAS MGM BRA



### World's Finest Parking Brake

More and more operators find MGM Brakes the safest, most efficient parking brakes ever designed. They cost no more than old style parking brakes.

Operated with a twist of the wrist, MGM Brakes are absolutely foolproof, eliminate maintenance problems found on most parking brakes.

MGM Brakes guard against loss-of-air runaways, as they are automatically applied whenever air pressure is lost.

Specify MGM Brakes on all your equipment!

#### MGM BRAKES NOW STANDARD ON THE BIG 4 IN THE WEST

MGM BRAKES CAN ALSO BE INSTALLED ON YOUR PRES-ENT TRUCKS, TRACTORS AND TRAILERS, ASK YOUR LOCAL TRUCK DEALER FOR EASY-TO-INSTALL MGM KITS.

SAFETY MGM SYSTEM



#### BRAKES INC.

Miller Building Cloverdale, California TWinbrook 4-2511



Write for colorful brochure which tells the whole story of how MGM Brakes operate as a parking brake, a superior emergency brake and a complete air failure control!

NO CREEPAWAYS. FLIMINATES CHOCKING NO MAINTENANCE AS REQUIRED ON MANUAL PARKING BRAKES you an average of \$10 to \$12 each month in direct SIMPLE, FOOLPROOF OPERATION heavy spring pressure (2) pulls against lever (3) applying brakes. PATENT NO. 2409908 AND PATS. PENDING

#### **New Products**

Continued from Page 208

#### Ratchet Wrench

has a 12-tooth pawl engaging a 60tooth gear. This new design is said to give longer life. Only about an inch of swing is needed for the ratchet to take another bite, a real advantage when working in tight areas. All popular drives are availabla

Contact P. K. Richards Asst. Sales Mgr., Hand Tools Div., New Britain Machine Co., South St., New Britain, Conn. Phone: BAldwin 9-1641.

#### Portable Air Compressor

is for use with Binks spray painting systems or for tire inflating or air tool operation. Model No. 33-1106 gives 50-60 psi. Model No. 33-1107 produces up to 80 psi. Both models are powered by a Briggs & Stratton 21/2 hp engine. Air compressor is a 2 cyl model, single stage, air-cooled.

It has V-belt drive and a constant speed unloader

Contact Robert L. Bender, Adv. Mgr., Binks Mfg. Co., 3114 Carroll Ave., Chicago 20, Ill. Phone: VA 6-4200.

#### Disposable Clothing

is soft, lightweight and can be thrown away when soiled. It's made for heavy wear where protection from dirt and grease is necessary. The Abanda clothing includes shirts.



pants, lab coats, hats, boots, aprons and gowns. They're fire resistant and water repellent. Price per shirt is 88¢ with pants at 80¢.

Contact J. Q. Kline, Asst Gen Mgr., General Scientific Equipment Co., P. O. Box 3038, Philadelphia 50, Pa. Phone: HAncock 4-1550.

#### **Heavy-Duty Batteries**

are now being marketed under the White brand name by The White Motor Co. The new line has seven heavy-duty commercial models including four 6-volt and three 12-volt batteries either wet or dry charge type.

Contact W. L. Pepin, Dir. of Service, The White Motor Co., 842 E. 79th St., Cleveland 1, Ohio, or your local White-Autocar distributor or dealer.

#### **Combination Lamp**

is a Class A combination turn signal, stop light, tail light and reflex reflector. Lucite lens is 51/8 in diameter. Several models are offered for use with or without seven-wire turn signal switches.

Contact Z. C. Ritz-Weller, Pres., King Bee Mfg. Co., 500 S. Throop St., Chicago 7, Ill. Phone: AUstin 7-3600.

(TURN TO PAGE 212, PLEASE)

#### Make FAST air brake line REPAIRS with hose and ends from Weatherhead's HC-11

You can save down time on air brake line repairs with the new hose and hose end assortment in the Weatherhead HC-11 Cabinet. Four large spaces below for bulk hose storage. Twenty-eight spaces above for hose ends. Drawers available. See your jobber soon. And send for free money-making folder No. 6161.

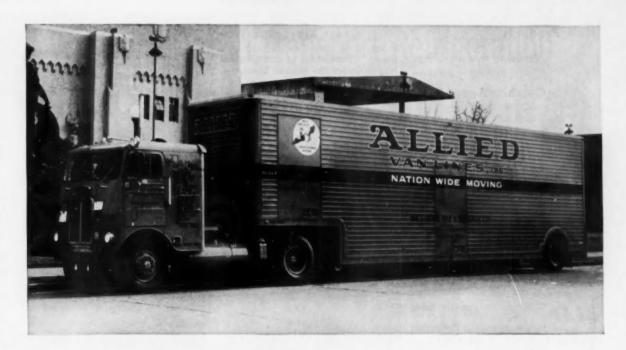


Steel Hydrualic Broke

Line Assortment. Two sizes: BA-48, BA-24

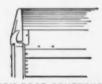
THE WEATHERHEAD COMPANY Fort Wayne Division Dept. CCJ-7 - 128 West Washington Blvd Fort Wayne, Indiana

COMMERCIAL CAR JOURNAL, July, 1959



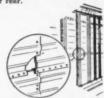
9.370 lbs trailer weight...20,300 lbs payload

#### New 40-ft Brown warehouse van



STURDY ROOF CONSTRUCTION Roof is firmly secured to the side panels and well-sealed to prevent water seepage. Builtin drain trough prevents water from cascad-

ing over rear.



SIDEWALL FABRICATION

Stiffeners are spaced on 16' centers, firmly riveted and secured to the top and bottom longerons. Skins are riveted to stiffeners, lower longerons and along lapped seams with aircraft quality rivets on 2° centers.



ROOF LONGERONS

Roof longerons are heat-treated aluminum extrusions providing the necessary strength at juncture of roof and side panels. Wide flanges allow vertical sidewall stiffeners to be firmly riveted both outside and inside.

High cube and low weight are important features in any warehouse van. To get both, Western Storage and Van Company, Seattle, a member of Allied Van Lines, Inc., specified a 40-foot van stepped 32" behind the landing gear and 8" ahead of the wheel wells. The result is the first unit of its type in the Pacific Northwest. Its wide doors permit easier and faster loading operations. Capacity for the van is 2,900 cubic feet. It carries a payload of 20,300 lbs in addition to padding and other equipment. Trailer weight is only 9,370 lbs. Aluminum construction eliminates rust problem . . . provides good-looking surface for lettering . . . is easy and inexpensive to repair.

Brown standard warehouse vans with similar weight and cube advantages are available in 19 to 40 ft lengthswith inside loading lengths of 18'6" to 39'6" in aluminum, steel or composite manufacture. Write us for details.



CLARK EQUIPMENT COMPANY BROWN TRAILER DIVISION

Michigan City, Indiana Box 410

#### **New Products**

Continued from Page 210

#### **Combination V-Belt**

transmits power on both sides of the belt. The combination timing and V-belt gives positive, non-slip drive. The T-V-belt is made by U. S. Rubber, can be used on a single serpentine drive to drive all power accessories on a car which now requires up to four separate belts. Belt is made



in % and ½ in. pitches, can also be used as a timing belt.

Contact Robert A. Cutter, Public Relations Dept., U. S. Rubber Co., 1230 Ave. of the Americas, New York 20, N. Y. Phone: CI 7-5000.

#### Stop Lamp

features "shallow depth" thin design for use on trucks and trailers where space is at a premium. The Griffin Model No. B200 has a 7-in. lens said to give unusual long distance visibility.

Contact Harold F. Griffin, Pres., Griffin Lamp Co., Shelby, Miss.

#### Parts Cleaner

cleans carburetors and other small parts. Made by Gunk Laboratories, it's now offered in a three gallon hench size

Contact K. E. Dempsey, Gunk Laboratories, Inc., 630 N. Harlem Ave., River Forest, Ill.

#### Cross Rib Truck Tire

is for drive wheels on highway-type trucks. Tire is made by Dayton Rubber, is named the Dayton Thorobred Deep Skid XDL. It has a nylon cord body and a "retread dam" which extends across the tread from shoulder to shoulder. This is said to give a firm base for repeated top treading instead of higher cost full treads.

Contact Roger P. Wise, Merch. Mgr., Tire Div., The Dayton Rubber Co., Dayton, Ohio. Phone: CR 8-2666.

#### Rubber Truck Dock Bumper

absorbs shock load created when a truck or trailer backs into the loading dock. It's shaped to prevent vehicle snagging. The M-4, as it's called, has a flat base, tapered sides, rounded front and can be mounted in any posi-



tion. Made by Goodyear, it can be supplied in lengths up to 19 ft for installation on wood, concrete or steel.

Contact L. A. Skinner, Dock Fender Sales, Goodyear Tire & Rubber Co., 1144 E. Market St., Akron 16, Ohio. Phone ER 6-1411, ext. 497 in the Akron area or the Goodyear district office in your area.

#### Spark Arrestors

trap exhaust carbon to prevent exhaust sparks from possibly starting fires. Suggested use is in oil fields, airports, warehouses and similar operations where exhaust carbon is considered a hazard. Gill spark arrestors are reported to be almost 100 per

cent efficient in trapping exhaust car-

Contact Art Spleiss, Sales Mgr., Erickson Products Co., 1960 Carroll Ave., San Francisco 24, Cal. Phone: DElaware 3-3447.

#### **Jack Repair Kits**

are for all types and makes of hydraulic jacks. The Uni-Pak kits are made by Ausco and contain all necessary replacement parts for repairing most common jack failures. Complete instructions are included for doit-yourself repairs.

Contact Arthur W. Schultz, Sales Mgr., Distr. Div., Auto Specialties Mfg. Co., St. Joseph, Mich. Phone: YU 3-2521.

#### Tire Buffing Wheel

permits mounting passenger car tires for buffing in a wide range of sizes without additional rims, tubes or



adapters. Tube type or tubeless casing is placed on the Salsbury Expand-O-Matic wheel which automatically expands the tire to actual bead size and inflates the casing to preset buffing pressure. Buffing arm can be

(TURN TO PAGE 214, PLEASE)

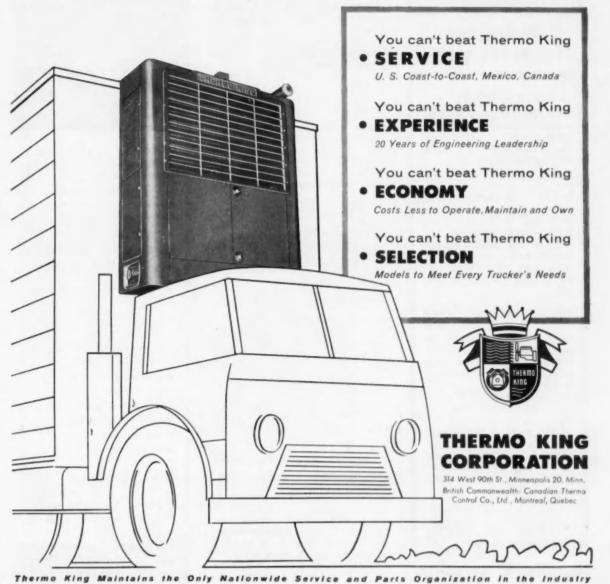
## First Quarter 1959 Intercity Truck Tonnage Shows 15.6 Per Cent Gain By Regions By Commodities

Region	First Quarter 1959*	First Quarter 1968*	Per Cent Change	Commodity	First Quarter 1959°	First Quarter 1958*	Per Cent Change
New England Middle Attantic Central Souther Northwestern Midwestern Southwestern Rocky Mountain Pacific	4,294 17,673 23,901 10,968 3,532 5,146 6,556 3,356 8,388	3,729 15,226 19,150 9,396 3,401 4,496 5,917 3,392 7,809	+15.2 +16.1 +24.8 +16.9 +3.9 +14.5 +10.8 -1.0 +7.4	General Freight Household Goods Heavy Machinery Liquid Petroleum Refrigerated Liquids Refrigerated Solids Agricultural Commodities Moter Vehicles Building Morerals All Others	38,349 317 791 23,469 268 824 943 3,479 1,750 13,744	32,052 301 567 21,620 240 796 815 2,539 1,912 11,672	+19.6 + 5.3 +39.4 + 8.6 +11.9 + 3.6 + 3.5 +37.0 - 6.5 +17.8
United States	83,836	72,514	+15.6	Total	83,836	72,514	+15.6

<sup>\*</sup> In thousands of tons. Covering 2133 Class I and II intercity common and contract motor carriers of property as reported by ATA Research Dept. only. It does not reflect total bruck tennage for the period.

World Leader in Transport Refrigeration

# THERMO KING



#### The Only Safe Way



## TO CHANGE

#### on Light-Duty Vehicles

Tire manufacturers' recommendations must be followed when mounting and demounting 14" and 15" tubeless tires on small commercial trucks and other light-duty fleet vehicles. These include the use of an approved lubricant.

RuGLYDE is THE approved tire lubricant—the only rubber lubricant that speeds and simplifies tire changing without endangering the air seal, rubber or paint finish in any way! RuGLYDE permits perfect bead seating—prevents "after-slippage" and tire "thumping"—and will not induce rust.

and Large Heavy-Duty Trucks

The need for RuGLYDE for larger truck tubeless tires is even more urgent. Applied to bead and rim, RuGLYDE eases the difficult job of seating the tighter and heavier bead on the tapered rim . . . prevents scuffing . . . protects the air seal. A "must", too, for tube and flap assembly.

RuGLYDE is also an ideal "cleaner" for making tires and rubber accessories look new. Use on lube-rack, too. Its deep penetrating action makes it unexcelled for squeak-proofing rubber parts and fittings.

See your jobber or writ



R-338

AMERICAN GREASE STICK COMPANY MUSKEGON, MICHIGAN

#### **New Products**

Continued from Page 212

rotated full 360 deg to permit complete buffing cycle without removing the tire. Three series are offered: the 2500, 2400 and 2300.

Contact E. F. Salsbury, Pres., Salsbury Corp., 1161 E. Florence Ave., Los Angeles 1, Cal. Phone: LUdlow 9-5911.

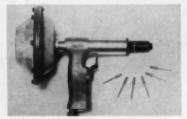
#### Photo Decals

are available in single or multi-color designs for fleet vehicle marking. A new Spectradyne process makes it possible to reproduce photos and detailed brush work on decals at low cost.

Contact Leo Lawrence, Process Design Co., 131 E. 21st St., Brooklyn 26, N. Y. Phone: BU 2-3189.

#### **Riveting Gun**

handles nearly all size and type of "Pop" rivets including he new closedend type known as the Impex rivet. Gun weighs less than 4 lb, is air-operated and priced below \$100. It's made for truck and trailer body panel



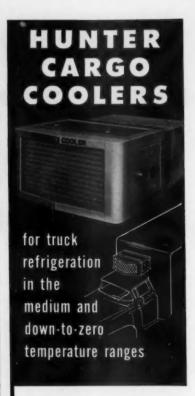
riveting. Named the "Texan," it works on 60 to 90 psi air pressure and can handle rivets with shanks diameters up to 1/2 in. steel or aluminum.

Contact Charles E. Heilig, Jr., Sales Mgr., "Pop" Rivet Div., United Shoe Machinery Corp., 140 Federal St., Boston, Mass., Phone: LI 2-9100.

#### **Fuel Pressure Regulator**

puts a constant, even fuel pressure on the carburetor float valve and seat to give correct float level under all driving conditions. It's called the Super S-300 Filt-O-Reg Pressure Regulator, is 2¼ in. diameter and 1¼ in. thick. It's said to improve fuel mileage, smooth out rough idling.

Contact L. Raymond, Pres., Alondra, Inc., 959 Crenshaw Blvd., Los Angeles 19, Cal. Phone: WE 4-3424.



MODELS H-30 AND HE-30 for down-to-zero, multiple-drop operations

MODELS H-20 AND HE-20 for medium temperature, multiple-drop operations

- · hydraulically driven
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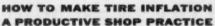
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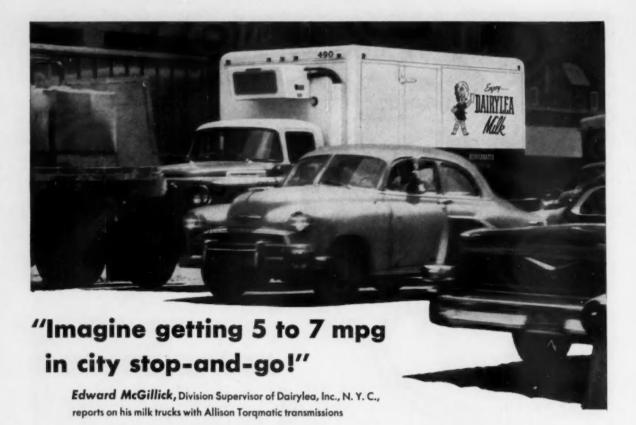


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"We think these troubles are a thing of the past," McGillick says. "Even in the relatively short time we've had the Torqmatics, they've saved us money. Their availability figures are far better than any of my trucks with stick-shifts."

And, according to the records of Torqmatic users the country over, Dairylea's moneysaving experiences have only begun. They can expect more mileage between overhaul needs—fewer repairs in general—longer engine life. Even their brakes will last longer in this constant brake-using operation.

"The built-in Torquatic brake is very popular with my drivers," McGillick reports. "In fact, they all want to drive the new Dodges. And our driver training job is greatly simplified."

For the moneysaving answer to transmission-wrecking truckwork like Dairylea's-or faster, more efficient hauling of any type-get the complete story on the Allison Fully Automatic Transmission. See your truck dealer now!

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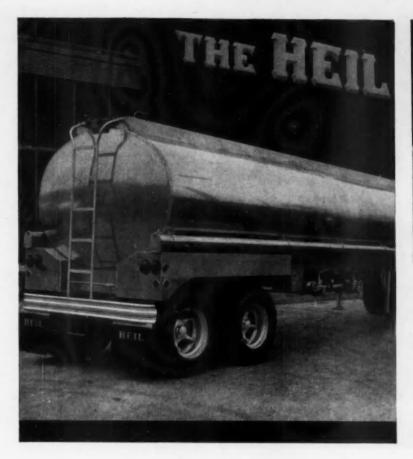
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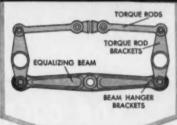
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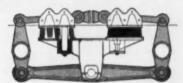
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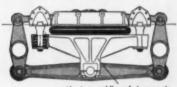


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#### **King-Seeley Governors**

Continued from Page 115

in conjunction with a constant spring rate. This cam which is the heart of the "Vari-Speed" governor varied the torque on the governor throttle shaft to maintain the speed for all loads.

With the cam

contour precisely worked out, some

flexible material was required which would follow the cam profile accurately. This material would transfer the spring load to the cam. Tests were made on various thicknesses of spring steel ribbons. From these tests, it was possible to specify the material required to assure excellent quality ribbons.

This governor, however, was sluggish at cutoff because the plate angle in the air stream was small. The frontal area could not always create sufficient torque to start the plate closing at the desired speed.

A vacuum-operated

piston was designed to apply a slight closing torque on the governor throttle plate. Utilizing the static vacuum at wide-open throttle, this stabilizer piston assisted in tipping the plate into the air stream, enabling the governor to cut off smoothly and at the right speed. The piston was later connected to the plate to avoid cheat and flutter.

When this was done, a cylinder or pin on the plate arm indexed in a slot on the stabilizer piston rod. The rod had two detents which slid in a groove and keep the rod from rotating. Too much friction developed on the piston rod at the detent and on the pin which promoted erratic performance.

This has been

eliminated by grooving the end of the rod for the pin and removing the detents. Any drag between the pin and the rod causes the rod to rotate like two bevel gears. This minimizes the friction of the piston both in its guide and at the pin.

To cover the wide

range of operation, two air flow governors are usually required. One model could be adjusted from 1800 to 3000 rpm no load. Another model from 2800 to 3800 rpm no load. These two governors then would cover 1800 to 3800 rpm no load, with a range of approximately 1000 rpm per governor.

Some governors

are flowed for high speed settings, and then, at the customer's request, turned down perhaps three turns for a drive-away speed setting. The phrase "turned down three turns" means that the adjustment cap is turned three turns clockwise. This reduces the number of active coils on the spring, say from 11 to 8 coils. The spring rate is increased and the spring tension is decreased. This also reduces the engine speed from 3100 rpm no load to 2500 rpm no load.

One other thing that might be pointed out is that an air flow gov-

(TURN TO PAGE 220, PLEASE)





# WORLD'S WINNINGEST HORSE protected by Clark Air Ride

This horse rides in regal style—and why shouldn't he? He's Round Table and he's won \$1,363,189 so far in his racing career—most of any horse in history. His "chariot" rides smoothly on Clark Air Suspension axles.

These axles were chosen by the California trailer manufacturer principally to swallow the shocks of high-speed travel. Clark Air Suspension also controls sway on curves . . . automatically keeps trailer level when

loads are unbalanced . . . prevents "wheel-hop" when stopping.

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The Navy selected a trailer built by The Gerstenslager Company with Clark Air Suspension.

This choice was made after painstaking road tests had shown that a trailer equipped with ordinary leaf



springs transmits up to 5½ "g's" of shock to the cargo. Coil springs cut this "bounce" to 2½ "g's". Clark airride reduces it to ½ "g's", well within the margin of safety desired by the Navy engineers and less than any other air suspension tested.

#### CLARK AIR SUSPENSIONS

come as complete packages, ready for installation on new or in-use semis, in single or tandem units. Each "package" includes the frame structure, air springs, shock absorbers, torque rods, radius rods, air protection filters, and leveling valves.



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and full details on any of Clark's automotive components, simply address a card or a call to:

#### CLARK EQUIPMENT COMPANY

AUTOMOTIVE DIVISION
Buchanan 3, Michigan

#### King-Seeley Governors

Continued from Page 218

ernor serves not only as a governor but also as a check on engine performance. Any change in the intake or exhaust system will cause

a reaction on the governor. It is readily seen that a change in the air flow through the governor will change its performance. This change in air flow may occur due to plugging of the air cleaner or carburetor jets, leaky gasket, cracked carburetor or intake manifold, incorrect valve lash, blow-by, and exhaust back pressure.

favorable driving conditions 25,000 to 30,000 miles is suggested. The governor is removed and a new or rebuilt one installed. The removed governor is thoroughly cleaned and new filters installed ready for the next vehicle

#### Manifold vacuum

is provided to the power jet and automatic choke by means of the proper gasket, a matching groove and a bypass hole through the governor. When the engine distributor is equipped with both mechanical and vacuum spark advance it must function as well under air flow governor control as it does under carburetor throttle control. To accomplish this the vacuum line to the distributor is broken and the two ends are connected to the governor. A spark transfer piston in the governor provides a continuous path for the vacuum under carburetor control.

When the distributor has full vacuum operation (no mechanical advance) the air flow governor must also provide for the correct vacuum at the distributor. This is also done by a spark transfer piston plus a balance chamber.

Crankcase ventilation is often encountered in air flow governor installations. It is particularly pertinent to locally operated vehicles on short hauls and long periods of idling. Anyone of three methods may be used to obtain this ventilation.

Please Resume Reading Page 115



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One particular

example of this type of trouble is a bypass type of exhaust muffler. which has a restricting ring and perforated sides to decrease the exhaust gas velocities. As this governor is used, the perforations become plugged, and eventually the only passage for escape of the exhaust gasses is through the restrictor ring. This then builds up the back pressure on the engine, decreases scavenging and decreases the air flow which in turn causes the governor to be very erratic.

It is well, therefore, to question the removal of a governor which has been performing satisfactorily and suddenly changes to unstable performance. A quick check of the air cleaner, muffler and valve lash may save some unnecessary labor.

It is also true

that the air flow governor should receive some maintenance. This maintenance is regulated by the type of driving and amount of dust in the atmosphere.

In city driving where dust is prevalent, the air filters and bearings should be cleaned between 6000 and 10,000 miles. Under more

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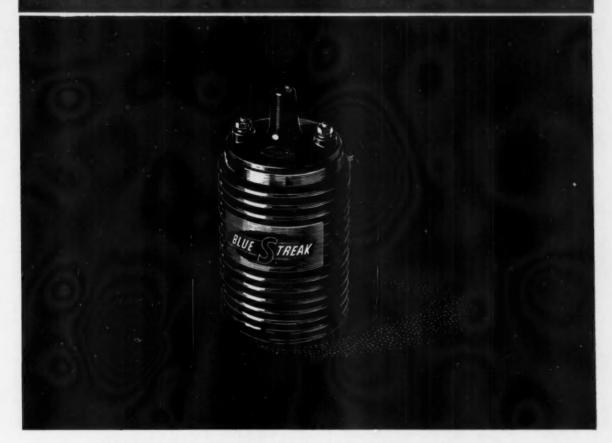
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Stop ignition troubles before they stop your trucks



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There's a Blue Streak distributor in your territory. He'll be happy to advise you, or write for catalog to: Standard Motor Products, Inc., Long Island City 1, N. Y.

# Blue Streak... Pioneers in Heavy Duty Ignition

REGULATORS • SWITCHES • COILS • CONDENSERS • CONTACT POINTS • WIRE and CABLE

#### Stewart-Warner

Continued from Page 115

the velocity of the air-fuel mixture increases; therefore, the force applied to the unbalanced part of the throttle plate increases. When this force exceeds the restraining force of the spring, the throttle plate will move toward a closed position.

As this happens, a greater area of the throttle plate is exposed to the force of the airfuel flow through the governor. Thus, there is an increasing velocity of air flow and an ever-increasing surface area to which this force is applied. If the rate of increase of this force is greater than the spring rate of the opposing force, then the throttle plate will continue its movement unrestricted.

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tection for your vice man while flating truck tires

It is necessary, therefore, to develop a restraining force of such characteristic that when the vehicle approaches governed speed the throttle plate will be permitted to move rather rapidly, but as it nears the position necessary for governed speed, the rate of increase of the restraining force has to accelerate so that the opposing forces are exactly equal when governed speed is attained.

The tension spring

attached to a four bar mechanism gives us the desired results. As the throttle plates begin to move, the rate of the restraining force is fairly linear, allowing plates to close rapidly. Then, as the vehicle approaches governed speed, the spring rate as affected by the mechanism increases sharply and stops the movement of the plates at the desired position.

When governed speed

is reached, the throttle plates must remain in the same position as long as the load is constant. When the load is increased, such as occurs when driving up a hill, the governor has to be sensitive enough to allow the throttle plates to open as soon as speed diminishes.

Also, when the load is decreased, such as driving down a hill, the governor must allow the throttle plates to close more in order to maintain governed speed.

Our first factor

in avoiding power loss is to prevent interference with air-fuel distribution by placing the throttle plate in the governor at right angles to the one in the carburetor.

If it were not in this position, the offcenter plate could direct more fuel on one side of the manifold than the other and starve some of the cylinders.

A second factor

in avoiding power loss is the use of a true velocity governor. By true velocity governor, we mean the governor senses only one force and that is the impingement of air-fuel flow on the unbalanced part of the throttle plate.

END

Please Resume Reading Page 116

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#### **Holley Governors**

Continued from Page 114

As the rotative speed of the unit is increased, the centrifugal force of the weighted valve will increase and eventually overcome the load of the spring retaining it. When this happens, the bleeding action of the valve is decreased and will continue to decrease until sufficient vacuum is applied to the force diaphragm to position the throttles to maintain correct speed.

It should be pointed out that the valve does not close completely, but continues to modulate the vacuum as the load requirements on the engine change. The cut-off speed, or basic governing speed, is raised or lowered by increasing or decreasing the "spinner" spring load.

#### With this basic

design, it is possible to use a number of speed sense units in any installation with one slave unit. One of the most logical applications of this feature is the combination engine and road speed or vehicle governor.

The basic difference is that the atmospheric vent line from the engine spinner does not return to the carburetor entrance, but instead goes to the vacuum connection of the second spinner. The atmospheric vent line from this spinner does return to the carburetor entrance. In this arrangement, the slave unit is vented through both spinners as long as neither one has reached its governed setting.

#### As soon as either

one reaches its governed speed, the spinner valve will close and vacuum will be applied to the slave unit. If the engine speed is reached first, the engine spinner valve will close and the second spinner will act only as a vent line. If the second spinner valve closes first, vacuum will be transmitted through the open engine spinner. In this way both engine and vehicle speed will be governed properly.

#### END

Please Resume Reading Page 114

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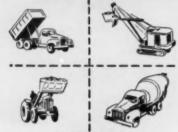
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### THE SERVICE RECORDER COMPANY

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#### Pierce Governors

Continued from Page 115

In addition to automatic control at top speed, we must have manual control from curb idle up to the limiting speed. This is accomplished by manual control of the carburetor through conventional linkages. The operator opens or closes the carburetor as desired. However, if in so doing the engine speed starts to exceed the limit for which the governor is set, the governor closes the auxiliary throttle, over which the driver has no control.

A second engine

speed governor is driven at onehalf engine speed by gearing on the camshaft. It is connected directly to the carburetor by means of an open linkage. The carburetor is equipped for dual control; that is, both governor and manual control. This is accomplished by providing the governor with a spring-loaded control lever, and the carburetor shaft with a clutch or pick-up. During governor control this lever positions the carburetor as if it were a solid lever.

The manual linkage controls the position of a pick-up on the carburetor shaft. When the driver wants to reduce the speed, the throttle is closed by the force of the accelerator return spring transferred through the pick-up to the broken lever spring of the governor. Obviously, the broken lever spring must be heavy enough to overcome the forces in the carburetor, and the accelerator return spring must be heavy enough to force the broken lever to idle. Thus the operator selects the throttle position desired until the speed starts to exceed that for which the governor is set, under which conditions the governor will close the throttle to the extended requirement.

Our roadspeed

governor comprises two main assemblies: (1) the governor proper, and (2) the power unit. The governor proper is driven from the speedometer outlet of the vehicle transmission, and therefore the speed sensing element (weightspring assembly) senses road or vehicle speed. A through shaft and an outlet on the governor provide a drive for the speedometer.

END

Please Resume Reading Page 115











## Purolator saves money for Material Service Corporation

About a year ago oil bath air filters were removed from a number of trucks and compressors operated by the Material Service Corporation, Lyons, Ill. They were replaced with Purolator Dry Type Air Filters.

Once a week, thereafter units were inspected, checked with manometer gauge and results logged. Two months after installation, elements were removed for the first time, cleaned and put back into service.

For the Material Service Corporation, the result was clear-cut proof that vehicles equipped with Purolator Dry Type Air Filters could be operated over periods of 6 to 8 weeks without element servicing; that drytype air filters could be used up to three months without element replacement; "that savings up to \$1000 per year per truck could be effected."

Results on the compressors were equally as good, bearing in mind that the compressors were run on a tighter 24-hours-a-day schedule.

None of this is surprising. With Purolator Dry Type Air Filters all of the air must pass through the filter before reaching the engine. What's more, unlike oil-bath filters which depend on engine speed for peak performance, dry-type filters work at maximum efficiency regardless of engine speed. In fact, they gain in efficiency as the dirt load increases.

This positive protection extends periods between overhauls, helps prevent major repairs and wasteful down time. Maintenance expenses are lower, too. Low initial cost, re-use, easy changing assure this.

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# PURE OIL COMPANY STATES ...

"We are sold on

AUTOMATIC LUBRICATION SYSTEMS!"

## Look at the savings on these TRAILERS . . .

It's no wonder that Pure Oil Company is enthusiastic about Lincoln Multi-Luber. The chart at the right shows how much downtime was avoided, how much maintenance costs were slashed, on just four Pure Oil gasoline trailers since Multi-Lubers were installed.

1	Trailer Number	Miles Traveled Since Multi-Luber Installation	Inspections Saved	Money Saved	
	No. 4578	38,793	20	\$ 87.40	۱
1	No. 3041	122,827	68	297.16	ı
1	No. 8714	112,569	59	236.00	ı
1	No. 9407	27,614	14	61.18	ı
-	TOTAL	301,803	161	\$681.74	Ī





# How the Multi-Luber Lubricates Automatically

Each 6th time the brake is applied, a pre-measured charge of refinery pure lubricant from a central reservoir is pumped under high pressure into each bearing simultaneously. With this constant automatic lubrication, bearings last longer, and costly lubrication down-time is avoided. The Multi-Luber system is completely sealed, preventing contamination and deterioration of lubricant from dust, mud, snow, and ice.

"We Believe the Multi-Luber is One of the Best Investments

We Can Add to a Transport Trailer,"

says Pure Oil's B. C. MARTIN

"All of our maintenance on automotive equipment is handled at outside shops on a preventive maintenance program. Where we have installed the Multi-Luber, we do not run the trailer through for preventive maintenance each 1500 miles as we do the trucks, but we do send the trailers through for 10,000 mile inspections. The cost saved more than pays for the Multi-Luber, and we have trailers lubricated at all times. The Multi-Luber tank holds 3 gallons of oil, which is approximately 1 year's supply. We are sold on the Multi-Luber and recommend it very highly."

\*Reg. U. S. Pat. Off.



For Complete information on the Lincoln Multi-Luber, write for Bulletins 532, 533 and 534

LINCOLN ENGINEERING COMPANY

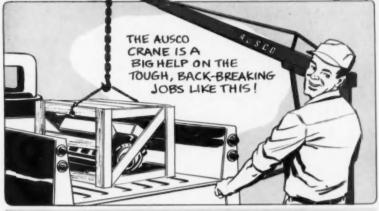
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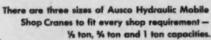
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USCQTacks

AUTO SPECIALTIES MFG. CO., INC. St. Joseph, Michigan Other Plants in Benton Harbor and Hartford, Mich., and Windsor, Ont., Can. Hydraulic Mand Jacks, Saf-Lift Jacks, One End Lifts, Transmission Mandlers,

Shop Cranes.

AUSCO SERVICE HELPS-

Superior Features for Superior Performance



A basic necessity for a speedy, efficient service program — plenty of Ausco roll-away service jacks. Check your equipment now. If you need more jacks or replacements, call your Ausco jobber. Capacities 1½ ton to 20 tons.

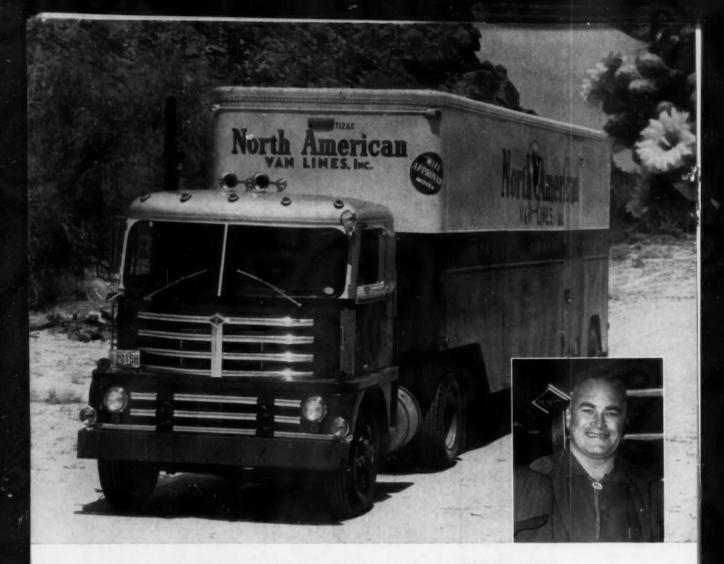


Handles any over-the-highway truck transmission with power to spare. Saves many man hours and avaids injuries to personnel and damage to units. Raises high enough (30 14") to transfer to bench or fixture. Full 2000 lbs. capacity.



Change Tires Faster with AUSCO Dual Wheel Dolly . . .

Take all the back-breaking work out of removing and replacing heavy tires. A sturdy Ausco hydraulic unit does all the lifting. Four ball-bearing caster wheels for complete easy mobility.



# "I thought carefully before I bought my Diamond T 923C for this service" says Frank Michalek

THE money was coming out of Frank Michalek's own pocket, so it isn't surprising he thought twice about buying a diesel tractor for this type of hauling. Here is what he thinks now:

"Even with grosses of only 40,000 to 45,000 lbs., my Diamond T diesel 923C really pays out. When I first checked with a fully loaded trailer, I drove 260 miles on 32 gallons of fuel which cost \$7.36. (This figures to 8.1 m.p.g.) That's a terrific difference against what my gas rig used to cost me to run.

"In 5518 miles I haven't added any oil, although I changed it the first time at 4000 miles.

"I've been driving since 1949, and I've never had a truck that rides so nice. I can drive all day and am

not a bit tired. The cab is roomy, gives a man a chance to stretch out.

"The Diamond T 923C handles and shifts easier than any truck I've ever driven and I've had a number of makes. It really holds the road and doesn't take any effort.

"Plenty of torque and power for fast get-away and hills. I shift about one-third less now, and I don't lug the engine, even without the shifting I did on the gas job."

When better ads are written, Mr. Michalek will write them. Why don't you find out how much economy you can get with a Diamond T diesel? See your dealer.

**DIAMOND T TRUCKS** 

Established 1905



The Diamond is for Quality

